CHAPTER 1

INTRODUCTION

1.0 Background of the Study

Nepal is an agricultural country. About 66 percent of economically active populations are engaged in agriculture and it contributes nearly 39 percent in GDP (MOAC, 2004). The growth of national economy largely depends on the development of agriculture by its dominant size and role. At present Nepalese agriculture is subsistence type and marred with low productivity. Agriculture has to go a big step forward in the process of modernization and commercialization.

Nepal is a land of great geographical diversity and divided into three distinct ecological zones; the plains (Terai) in the south, hills in the middle and the mountain range of the Himalayas in the north. Thousands of rivers and streams that flow north- south bisect the landscape into hundreds of small hills, rivers and valleys isolating the residents from each other. These three regions also display an immense diversity of human settlement patterns, population, land distribution, productive resources and level of economic development, when we go north to south or east to west (ARENA, 2005).

Nepal is rich in biodiversity. The altitude varies from 70 meters to 8848 meters and climate changes in the differences of each 100meters. The differences in the climate are suitable for the growing several types of plants, several varieties of high valued cash crops and staple cereal crops in Nepal. Among the cereal crops rice, maize and wheat are dominant crops from the viewpoint of total area cultivated as well as the volume of total production.

The total land area of Nepal is 147181 square kilometres. Out of the total land available, only 2.65 million hectares of land is cultivated. Rice, maize and wheat are the dominant staple crops, which is cultivated in 1.6, 0.8, and 0.6 million hectares of land respectively in the fiscal year 2003/04 from which 44,55,722, 15,90,097 and 13,87,191 metric tons (mt) of production was made. Rice, maize and wheat can be grown in all part of nation including Terai and mid hills of Nepal. However, Terai and inner Terai are the main production areas and are said to be the grain basket of Nepal. The average productivity of rice, maize and wheat in Nepal were 2.86, 1.91 and 2.09 metric tons per hectares respectively in the fiscal year 2003/04 (MOAC, 2004).

The plains and valleys are comparatively fertile with high agricultural potential whereas the hills and mountains are less promising in terms of agricultural production. Hill and mountain regions have received less priority in terms of development. Terai holds major share of population (almost half) whereas hills and mountains also hold significant population.

For the last ten years, there has been an arm rebellion and conflict in Nepal. The communist party of Nepal (Maoist) undertook the arm rebellion and many people have lost their lives. Peoples faced torture, abduction, imprisonment and disappearances from the state as well as Maoist. The Maoist killed people accusing them for, in case of spying, feudal, capitalist, anti- political parties and security persons. Civil unarmed people are being killed by state accusing them as the terrorist. People feel insecurity. So high rate of migration has been taking place from Maoist conflicted areas to district headquarters and town in search of security. Many people migrated to India as well as foreign countries in search of employment and secure place for living.

1.1 Statement of the problem

Nepal's social system is based on semi-feudalism. It has multi- ethnic, multi caste and multi linguistic society. Caste and race determine the status of the people in the society. Higher-class families are the landlords and they are the ruler in the society. People of other classes are considered as ethnic, tribal and dalits. They are majority in number but control very small section of resources available in the country. They have been living without fundamental freedom of choice and actions. They lacked food and shelter, health and education facilities. They have been facing extreme vulnerability. They also face economic dislocation and natural disaster. They often are exposed to ill treatment by institutions of state and society. Concentration of political, administrative power and wealth lies in the hand of very few people. Mass people are excluded from the fruit of development. In this context, a revolution took place in the county. After the restoration of multiparty democracy in the country, Nepal adopted liberal open market policy. The government framed a constitution with the consensus of concerned political parties (Nepali Congress, Leftist and the King) in 2047 B.S. The same government conducted the general election in 2048 B.S. Nepali Congress party formed first democratically elected government. The government could not complete its full term and announced mid-term election in the year 2051 B.S due to internal conflict among party leaders. No significant socio-economic break through during this period.

After the mid term polls, government took the decentralisation approach for development. The government started to allocate block grants to the local bodies (DDC, VDC) for the first time in the history of Nepal. The allocation of such resources brought a dramatic boost to the development process, which was named "Build Your Village

Yourself." In the same year the government approved a twenty years Agriculture Perspective Plan (APP). It remained as a remarkable event in the history of agriculture development of Nepal.

After this the other allies formed new government. People had great aspirations toward the democracy. But the successive government became unable to address the central problem of poverty, unemployment, inequality, social discrimination and other basic social facilities of health, education, drinking water etc. The government failed to incorporate the interest and aspiration of the majority of people. The CPN Maoist put forward 40-point demand with the government, which was ignored totally. So CPN Maoist started an arm rebellion naming it as a people's revolution. It started in 1996. Development infrastructures were made targets and destroyed. Similarly, the security personals and workers of ruling parties were attacked and killed. The government responded with repression by declaring Maoist as terrorists and army was deployed to calm down insurgency. Until the end of 2004, more than 10,500 people have lost their lives. Many thousands are believed to have sustained permanent injuries. Rural people have been displaced from their villages and rural infrastructure has been destroyed (Karki and Kattel, 2005).

Most of the rural areas in the mountain region is controlled by the insurgents. Development programs could not be implemented in the remote areas. Government was unable to allocate sufficient budget for the development of rural areas. Government could not spend even allocated development budget. So the development process has been halted. It is believed that the pace and growth in the conflict-affected areas has been slowed down. It has affected all sectors of economy such as agriculture, which is the main sector of

economy in rural Nepal. Basic inputs of agriculture such as chemical fertilizers, tools, equipments, seeds and other inputs could not be provided in the remote areas. Irrigation projects, agriculture roads could not be constructed and the growth of agricultural sector was slowed down.

The conflict, initially, concentrated in 6 districts; Rukum, Rolpa, Jajarkot, Salyan and Gorkha in mid-western and western Nepal and in Sindhuli in the central east of Nepal. Gradually Maoist insurgency grew all over the nation. The conflict concentrated in the districts of Mid-western development region, which is considered to be one of the deprived areas of the country. There are two arguments that conflict started due to poverty and deprivation as well as social exclusion and poverty and deprivation increased due to the conflict. First one looks at the cause of conflict and second one, the impact of the conflict. To analyse the poverty and deprivation, there are economic, social, cultural as well as political parameters, which need to be addressed. Rural economy is dominated by agricultural sector. Traditionally agriculture is dominated by production of cereal crops and animal husbandry. The status of cereal crop production, the productivity of the cereal crops and growth in productivity might indicate some of the reasons of deprivation. This study focuses on the production and productivity of the three cereal crops rice, maize and wheat and its trend in ten years is shown in the conflict and less conflict concentrated districts.

1.2 Objectives of the study

The main objective of the study is to compare the area, production, productivity and growth of productivity of the major cereal crops (rice, maize and wheat) in the Maoist conflict concentrated and less concentrated districts.

The specific objectives of the study are as follows:

i. To compare the analyses of the total planted area, production and productivity of rice, maize and wheat in both conflict and less conflict concentrated districts.

ii. To examine existing challenges for the promotion of production and productivity of rice, maize and wheat.

1.3 Limitation of the study

The study is based on the secondary data of 10 years (fiscal year 1995/96 –2004/2005) available through government agencies. The study was limited only in 8 districts namely Rukum, Rolpa, Jajarkot, Salyan as a Maoist conflict concentrated districts and Kaski, Tanahu, Lamjung and Kavre as a less conflict concentrated districts. The findings derived from this study could not be generalized throughout the country. The findings drawn from this study will be valid only for these districts.

1.4 Organization of the study

The study has been divided into six different chapters. Chapter 1 describes the background and summery of the study. The chapter also includes statement of the problem, study objectives and limitation of the study. Chapter 2 gives the review of literature. The chapter also includes definition and concept of conflict, causes of conflict, positive and negative outcomes of conflict, theory of conflict, conflict in Nepal, conflict in other countries and Epilogue. Chapter 3 describes the research methodology. The chapter also

includes description of the research site, research design, and method of data collection, data processing, and reason for selection. Chapter 4 analyses the data, which also includes glimpse of major cereal crops, trend of the area, production and productivity of rice, maize and wheat crop. Chapter 5 summarizes study and contains some recommendations.

CHAPTER 2

REVIEW OF LITERATURE

This chapter describes various issues related to definition of conflict, theories of conflict, causes of conflict, positive and negative outcomes of conflict and the conflict in Nepal, its nature causes and implication in economic field.

2.0 Definition and Concepts of conflict

In every human society there is conflict. It is caused due to the reason of clash of interest. Conflict occurs with positional differences over values and belief systems demand for self-determination .The main reason of conflict is lack of access of people in the distribution and use of resources and power.

In the Webster's dictionary conflict is defined as 'a battle, contest of opposing forces, discard, antagonism existing between primitive desires and instincts and moral, religious or ethical ideas'. Conflict occurs when two or more people oppose one another because of the difference in their needs, wants, goals or values. Conflict is almost always accompanied by feeling of anger, frustration, hurt, anxiety or fear.

Conflict is an ambiguous term so different people in different contest interpret conflict differently. Conflict can refer to a debate, a disagreement, dispute or argument. Also it can refer a struggle or a battle and chaos and violence too (Warner, 2001). Conflict is an active state of disagreement between people with opposing views, opinions and practices manifested in different forms such as grievance, conflict, dispute and war (Walker and Daniels, 1997).

Conflict is the combination of both positive and negative interactions. Conflict brings the changes as well as destruction in the society. Conflict is essential and natural

aspect of human life. In the context of politics, conflict is very violent. Conflict is an ever-present process in human relations (Green, 1995). Green (1995) defined it "as a deliberate attempt to oppose, resist or coerce the will of another or others."

2.1 Basic causes of conflict

Conflict is universal. It occurs in all times and places. There are various causes of conflict in different situation and it is affected by several reasons. According to Malthus, reduced supply of the means of subsistence is the cause of conflict. According to the Darwin, the principles of struggle for existence and survival of the fittest, and that is the main cause of conflict. Freud and some other psychologists say that the innate instinct for aggression in man is the main cause of conflict (Bhusan and Sachdeva)

Conflict is one of the unavoidable parts of society. In every society we can find many people with different aims and goals or with different interests, which causes conflict among them. In human society as well as in animal world there is competition over scarce resources and ultimately it paves the path towards conflict. Likewise other causes of conflict are differences in attitude and perception, communication gap and dependence over other. People in society can be categorized into two-those who rules and those who are being ruled. The rulers try to impose their supremacy and they try to dominate the ruled ones but the large mass protest against it, conflict arises. In the same way divergent philosophies also may cause conflict. Unwillingness to respond the newly changed social, political, cultural and economic and other changes are cause conflict. And ambiguity over responsibility and authority also cause of conflict (Upreti, 2004).

In Nepal causes of the conflict are rampant poverty, structural inequality, political oppression, social discrimination against certain groups like Kamaiya, women,

Dalit, etc. Failure of the public administration, wide spread corruption and continuous failure of the successive governments to address these structural problems are the root causes of the current conflict in Nepal. The Maoist insurgency is only the manifestation of these problems. Political instability, dependency syndromes, lack of transparency and social exclusion are further contributing to fuel the conflict (Upreti, 2004).

2.2 Positive and negative outcomes of conflict

Every concept has its own positive and negative aspects and certainly conflict has.

2.2.0 Positive outcomes

People may say that conflict has only negative outcomes but it is wrong. The positive outcomes of conflict are discussed below.

Firstly, when there is a conflict persons are motivated to work harder. They are encouraged to work in group to fulfil their common needs. Conflict makes the problem more clear and transparent. It leads the society towards innovative ideas and new approaches. Conflict draws the concentration of public in burning problems and helps to find a reasonable conclusion. Conflict causes the people to analyse the positive and negative outcomes of their clash. Also it sharpens people's capacity to bargain, compete and negotiate. And finally it contributes to positive reform and in social change (Upreti, 2004)

2.2.1 Negative outcomes

Nothing is to be judged by seeing its only one part because behind every good aspect the bad are shadowed and behind every bad aspect the good are hidden. So conflict also has its negative outcomes. Conflict can lead to anger, frustration and fear of failure. Conflict can make a person bias one is not ready to accept the positive aspects of his opposition but stands firm in his points at any cost. Another negative outcome of conflict

is- it restricts people from getting critical (overall) information, ruined in relationship, lower productivity from wasteful conflict are other negative outcomes of conflict. Likewise conflict can consume money and time which leads to the loss of productivity. Similarly it can lead to violence and disintegrate social harmony and ultimately society can break (Upreti, 2004)

2.3 Conflict theory

Conflict theory is a part of the sociological theory that tends to explain social life or human life through conflict. Many efforts have been developed by many thinkers to explain social behavior in the context of conflict. There are many attempts in contemporary sociology to develop a unified conflict mode of sociological analysis so that the integral features of social behavior might be covered. However, we see in reality that all of the theories are able to cover only the partial aspect of social behavior. The foundation of conflict theory was coined by the various philosophers, thinkers and statesmen, although sociological conflict theory is the recent origin. The ancient thinkers like Kautilya, Polyboius Machiavelli, Bodin, Hobbes etc. have regarded conflict as a foundation of the development of state and society; some of the other theories are as follows.

2.3.0. Theory of Karl Marx

Karl Marx (1818-1883) said that society comprised a moving balance of antithetical forces that generate social change by their tension and struggle. Marx's vision was based on an evolutionary point of departure. For him, struggle rather than peaceful growth was the engine of progress; strife was the father of all things and social conflict, the core of historical process. The meditative force in history was the manner in which men relate to one another in their continuous struggle to wrest their livelihood from nature

(Coser, 1996).

Marx's class theory rests on the premise that "the history of all hitherto existing society is the history of class struggle". He notes that unequal access need not all times and under all conditions lead to active class struggle. The potential for class conflict is inherent in every differentiated society, since such a society systematically generates conflict of interest between persons and groups differentially located within the social structure and more particularly, in relation to means of production Marx regards the existence of exploiter classes. He accepts the predominance of economic factors and says that economic factors determine other aspect of society. There is interdependence between mode of production and social structure. In the context of class struggle and historical development Marx classified five eras: early communist era; feudal era; capitalistic era; slave holding era and socialistic era. He interpreted that all the eras are the consequence of class struggle between laborers and master.

2.3.1. Theory of Herbert Spencer

Herbert Spencer's (1820–1902) view, evolution that is, "a change from a state of relatively indefinite, incoherent, homogeneity to a state of relatively definite, coherent, heterogeneity, "was to Spencer that universal process, which explain alike both the" earliest changes which the universe at large is supposed to have undergone. And those latest changes which we trace in society and the products of social life" (Coser, 1996).

2.3.2. Theory of Max Weber

Max Weber (1862-1920) did not believe that sociology could be a natural science as positivist claim. Instead, he devoted his efforts to historical analysis, especially of the transition in industrial-bureaucratic social orders. Turner (1995) said that Max Weber

developed a number of important conflict principles, which are similar to those espoused by Marx but which, at the same time, subtly shift points of emphasis.

In systems where the sanctity of tradition legitimates political and social activity, there are three conditions that encourage the emergence of charismatic leaders who organized conflict group that challenge such traditional authority which are given below;

1. A situation where there is a high degree of correlation among power, wealth and prestige or incumbency in positions of political power (party) occupancy in advantaged economic positions (class) and membership in high ranking social circles (status group).
2. Dramatic discontinuity in the distribution of rewards or the existence of divisions is the social hierarchy that gives privilege to some and very little to others. When only a few hold powers, wealth, and prestige and the rest are denied of these rewards, then tension and resentments exist. Such resentments become a further inducement for those without power, prestige and wealth to engage in conflict with those who hoard their resources.
3. Encouraging conflict slow rates of social mobility. Those of low ranks have little chance to move up social hierarchies or to enter a new class, party, or status group, then resentment accumulates. Those denied of opportunities to increase their access to resources become restive and willing to challenge the system of traditional authority (Ibid).

2.3.3. Theory of Polybious

Polybious has the credit of explaining the conflict for the first time. He explained

the human society on the basis of conflict. According to him, human society destroyed in the past due to conflict. Those who are remained out of the destruction realized an organized unit of government and thus monarchy was introduced. After that when the king neglected his duty to establish peace and justice, some aristocrats also neglected their duties. Democracy was introduced as a result of conflict. Even in the democracy when rulers deceive the people, they are displaced as a result of conflict. In this way, the cycle of change of power is being continued. Polybious says that the only solution of this problem of conflict is to establish such a government in which the feature of monarchy, aristocracy and democracy are included (Sharma, 1996).

2.3.4. Theory of Ralph Dahrendorf

Ralph Dahrendorf's opines the view that, society has two faces one of consensus and the other of conflict. He analyses the ugly face of society and abandons the utopian image created by functionalism. To leave utopia, Dahrendorf advised that concentrating in the future is not only on concrete problems but also on such problems, which involve explanations in terms of constraint, conflict and change. This second face of society may aesthetically be rather less pleasing than the social system but, if all sociology were to offer an easy escape to utopian tranquility; it would hardly be worth our efforts (Dahrendorf, 1995). To leave utopia it requires that out sided conflict model be substituted for the one sided functional model. He regards that the dialectical conflict theory represents an important Parsonian functionalism, which tended to over emphasize social integration. Dahrendorf's conflict theory not only examined on the kinds of conflict in societies but also represented a more comprehensive theory of society that provides a more adequate base for theorizing about social organization than either functionalism or other alternatives (ibid).

2.3.5. Theory of Lewis A. Coser

Lewis A. Coser, in his first major work on conflict, remarks that conflict has become the standard polemic against functionalism. He adds that conflict is not given sufficient attention with related phenomena such as deviance and dissent to easily view as "pathological" for the equilibrium of social system. Unlike Marx's or Dahrendorf's emphasis on the disruptive consequences of violent conflict, he emphasizes on the integrative and adaptability functions of conflict for social systems. He justifies his efforts by criticizing functionalism for ignoring conflict and conflict theory for under emphasizing the functions of conflict. According to him this functions to maintain the body social or of its vital parts. From this point, he develops an image of society that stresses (Turner, 1995).

- The social world can be viewed as a system of a system of variously interrelated parts.
- All social systems reveal imbalances tensions and conflicts of interests among variously interrelated parts.
- Process within and between the systems constituent parts operates under different conditions to maintain, change and increase or decrease a system's integration and adaptability.
- Many processes, such as violence dissent, deviance, and conflict, which are typically viewed as disruptive to the system, can also be viewed, under specifiable conditions, as strengthening the system's basis of integration as well as its adaptability to the environment.

2.4 Conflict in Nepal

On 13th February 1996, the Communist Party of Nepal (Maoist) declared a people's

war in Nepal, issuing leaflet that called on the people of Nepal to 'march along the path of the people's war to smash the reactionary state and establish a new democratic state'. The stated objectives were to overthrow the bureaucratic - capitalist class and state system to uproot semi-feudalism and to drive out imperialism, in order to establish a new democratic republic with a view to building a new socialist society. To achieve these objectives; CPN (Maoist) adopted the strategy and tactics of a 'protracted people's war' with the aim or purpose of establishing base areas in the rural and remote areas, so as, eventually, to surround urban areas and seize state power. Initiation of armed struggle by the CPN (Maoist) was to be analysed from the perspective of these reasons. Upreti (2004) opines that rampant poverty structural inequality, political oppression, social discrimination against certain groups like Kamaiya, women, Dalit, etc: failure of public administration, wide spread corruption and continuous failure of the successive government to address these structural problems related to social, political, administrative inclusion causes of the current conflict in Nepal. The Maoist insurgency is only the manifestation of these problems. Feudal legacy, political instability, dependency syndromes, lack of transparency and social exclusion are further contributing to fuel the conflict.

The conflict not only affected the agricultural sectors of the country but also it raised a severe question on the right of human living too. A large number of people were killed both of state and Maoist side. The total death tools in the Maoist "People's War" (13 February 1996- 13 April 2006) is 13206. Among them 8300 people were killed by state and 4906 were killed from Maoist side. Almost in all 75 districts there are death tools due to the Maoist insurgency. In the study area total 2893 people lost their life. In Rukum district 733 people were killed from state side and Maoist killed 169 people. Likewise the death tool in

Rolpa, Jajarkot, and Salyan is 508,131 and 221 from the state side. In the same way 242, 76 and 77 people were killed in Rolpa Jajarkot and Salyan from the Maoist side respectively.

Again the death tool in the districts Kaski, Tanahun, Kavre and Lamjung from state side were 50, 52, and 175 respectively and from Maoists side were 50, 41,152 and 89 respectively. (INSEC, 2006).

2.5 Conflict of other Countries

The world is facing many kinds of conflict and war. Some country are facing political, some are facing religious and ethnic conflicts and war. Among these countries some have been divided geographically. Some countries are facing separation of racial conflict by these conditions the economy has been dismantled. Vietnam War, Falkland war, Iraq War, Afghanistan, Indio-Pakistan, China and India war are the example of the political war. The racial conflict of Hutu and Tutsi of Rwanda, conflict of Congo, Algerian conflict, Kosovo war of Europe, Bosnian conflict, Nazi rules of Germany, and Philippine conflict of Mindanao are also religious and separatist conflict. The sporadic conflict of Germany, Britain's white coloured community and Asian community's riots in different cities, American conflict between black minority and white majority are the racial conflicts.

The conflict between Muslims and Christian's of Indonesia and the riot of radical Hindus and Muslims in Indian city Ayodhya are the religious wars. The other conflict of North Ireland between Catholic and Protestants is also an example of religious and political war. The dispute between the socialistic and capitalistic model of politics is the prime reason of conflict in Africa, South America East Europe and Asian Countries. Turkish war was concerned between Kurd and others. Likewise Kurd and Shia are engaged in the war in

Iran. Similarly Shia, Sunni and Kurds are fighting in Iraq. And in the series of religious war Bosnia, Sudan and Nigeria are also engaged. Religious war in Sudan is centered at Darfur. The Nigerian war is between the Muslims and Christians. Not only is there a religious war in the world but also there are other wars having different aims. Among them some are the racial war, in Burundi, Ethnic war in Sri Lanka between Tamil and Sinhalese. The other form of war prevailing in the world is separatist war at Kashmir demanding the territory to be separated from the other party. (Upreti, 2005).

Nepali conflict is separate from all of these; it is related to the demand of inclusive democracy and against feudalistic social structure and discriminatory development efforts.

Jawala (2002) “Baicharic Bichalan ko Bhoomari ma Maobadi Aandolan " explained that causes of the Maoist conflict are ideological, political, economic, social, administrative, immediate, nationality, external and geographical ones.

He further reported that the income source of the people of Rukum and Rolpa was hashish and when the government restricted cultivating it they could not earn by selling this product which caused their income to decrease. Their anger of being unable to earn pushed them towards Maoist insurgency. In Rolpa and Rukum, Magars are densely populated who were dominated and they are distracted from the main stream of the country and Maoist caught their sentiment. As a result they followed the insurgency.

Karki and Bhattarai (2003) “Whose War?" attempted to discuss the long- term costs of the conflict, especially its economic and socio-cultural impact. According to this study the value of physical assets damaged and destroyed is very high. The damages done to VDCs, municipalities, buildings, road and transport, drinking water, and sewerage system, security agency offices and service agency offices such as forestry and soil

conservation agriculture and livestock, located in dispersed areas are immense. This study also reported that production uncertainties and slow investment have slowed down job creation in the rural areas due to which unemployed mass continued to grow. Jobs in agriculture have also been affected by the conflict. Lower production lowered seasonal employment opportunities in agriculture. Families were leaving their land barren for a number of reasons, including lack of adequate labor forces and Maoist taxation of the product. This is the main cause of the reduction in local farm production. According to this study there were several reasons why families left the lands fallow. One was the unavailability of labor forces after most of the able bodied men had either joined the Maoists or had migrated voluntarily or had been forced out of their villages. In Kailali district, for example, the farmers said that they could not import seeds and fertilizers from India as easily as they did in the past because of increased security checks and "harassments" at the border. Farmers could no longer irrigate their fields during the night because of insecurity. The study also shows that many of the respondents said the incentive to produce more was no longer there because of the seasonal "donations" they had to make to the Maoists. Farmers suffered from loss of their crops due to Maoist operation. Sometimes Maoist had set fire on piles of harvested paddy. On the other hand the security forces had slashed and destroyed cornfields and sugarcane plantations to protect themselves from possible Maoist attacks. They reported that the conflict had disrupted development nationwide. Most of the grassroots projects were held up or operated at low levels even during fieldwork because of the poor law and order situation. The government had been unable to spend as much as it would have wanted on development projects after 2000/2001, but the spending on security had grown continuously. Conflict disrupted local

economic activities. Women, children, old man, ethnic groups, dalit were also affected by this conflict.

Dahal *et al.* (2004) studied the "Impact of Internal Armed Conflict on Women and Children " in Sindhuli District of Nepal and identified the causes of violent conflict as injustice in the society, political causes, social discrimination, suppression, unemployment and poverty. This study shows the violent conflict has affected the women and children by isolating them from their family member. They had to bear an economic burden, a decrease on their income and productivity. The conflict has victimized the children, which affects child development, child survival, and child protection. This study also shows the positive impact of the conflict among the community. It has increased women's capacity to involve them in militant force. The political participation, family and social responsibilities have increased. It helped to reduce domestic violence against women and gender discrimination.

Gautam (2005) "Armed Conflict and Its Impact on Gender" in the book "Nepal: the Maoist insurgency and beyond" suggests that the oppression of women and ethnic minority by the patriarchal Nepal society and the failure of the state to address traditional social injustice compelled the marginalized groups to support the Maoist insurgency.

Kattel (2005) reported that the issues brought to the fore by Maoists should be addressed politically if Nepal is to return to being a normal state. He also reported that the people's war, the root of the current crises in Nepal, should be looked through the historical perspective.

Karki and Kattel (2005) "Transcending the Maoist Insurgency" in the book "Nepal: the Maoist Insurgency and Beyond" pointed out the causes and consequences of the people's war stems from a complex mix of ideological, political, socio-cultural and

geo-political factors.

Karki and Kattel(2005) "The Maoist Insurgency and Emerging Militarization in Nepal" reported that conflict had badly affected the national economy. Government spending on development projects has fallen sharply due to the diversion of development funds and due to the government's inability to implement development projects in the countryside. Agricultural production has visibly declined; the price of food items has soared, weighing heavily on the low-income populace. They also report that in the countryside, the fear of insecurity has caused the displacement of able-bodied men to urban areas, and overseas. This has impacted negatively upon agricultural production. Even under normal circumstances, most rural districts in the western Nepal have food – scarce. As the agricultural production has visibly declined, and the inflation increased alarmingly, the rural population is increasingly vulnerable to hunger, malnutrition and starvation. They said that on the one hand, the state has failed to regulate the declining trends in the economy, on the other Maoist activities have severely undermined the basis of rural livelihoods and rural service delivery infrastructure, such as small hydroelectric projects, post offices, telephone towers and other public infrastructure.

Siwakoti (2005) " Children in Conflict; a lost Generation" in the book "Nepal: the Maoist insurgency and beyond" reported that children are sometimes used as human shields, porters, cooks and combatants, not to speak of other forms of hazards they suffer; direct and indirect, physical and emotional.

Sapkota, *et. al* (2004) “the Cost of War in Nepal” says that conflict universally impacts the economy. Economic activities during the conflicts slow down and disrupt the networks and channels through which such activities take place. Conflicts affect economy

through destruction, disruption, diversion and disserving. The conflict induced loss in gross domestic product. This research study shows that the Nepalese economy grew, though sluggishly, both in the pre-conflict and during the conflict period. In the pre-conflict period, the economic growth was more stable and robust, while in the post conflict period it has been wobbly at times. They reported that the tourism sector is mainly hit by the disruption effect of the conflict. If shows the increasing security cost in the contest of the conflict and shows the decline development budget. Human and capital resources went abroad. Industrialists and businessmen privately confide that many medium scale businessmen had already shifted their core capital abroad, particularly in India. The impact of conflict in agriculture is one of the most complicated exercises in national income accounting, ever more so in Nepal. Agriculture sector has been affected due to widespread displacement of the population due to Maoist conflict. The study says that conflict disturbed the farm management system and the absence of the main decision maker has affected the production with the fear of conflict and uncertainties and have forced many farm owners to reduce the area of plantation.

Seddon and Adhikari (2003) "Conflict and Food Security in Nepal" reported that the Murma village, in Mugu is the most productive part of Mugu district where Maoist have established their concentration and ordered landlords to leave the villages. Nowadays, Maoists have started farming the village land on a co-operative basis. According to this new custom, people of the village who can work in the field form a group and they cultivate the village or allotted lands on a joint basis. The group would get one third of the production, which is shared equally between members. Two thirds of the production has to be given to the Maoists. But as the people were not interested to cultivate the land by this

custom, production went down significantly. According to this report in some areas and among certain categories household owing to direct threats and (attacks by Maoists or by security forces), insecurity, diminished access to land and other inputs, all of which reduced the ability to undertake normal farming activities and has had to go for involuntary migration. The conflict has had an adverse effect on agricultural and livestock production; partly as consequence of the rural exodus and partly as a result of lack of inputs, there is no doubt that ordinary farm work has been disrupted in many areas as affected by the conflict. For instance, in Humla, many have fled from their villages owing to the general sense of insecurity, and of those who remain; many do not have the human power to farm, or have already used the seeds. Others may not have planted their season's crop for the fear that the insurgent will remove it.

Nepal (2003) "The Maoist Movement and its Impact in Nepal" in the book "The People's War in Nepal" reported that the armed movement has had a negative impact on agriculture. Many young people have left the villages to take refuge and to search employment in the urban area. This means that much agricultural land is not farmed and the productive capacity of the land has declined. He said that if this continues the whole system of agriculture and farming as an occupation will be certainly undermined. He also reported that the regular activities of development and construction are also blocked due to the Maoist terror and governmental suppression. The non-governmental and other associations activated in rural agriculture areas are returning back one after the other for reasons of security. He said that the Maoists are very focused on blocking banking activities and banks in the rural areas. Consequently, agricultural loans are not distributed and the rural areas are deprived of credit. The general effect on investment, production and

development has been negative as far as the national economy is concerned. According to this report the insurgency has adverse effects on the overall socio-economic life of the country. The destruction of infrastructure including airports, bridges, power plants and telecommunication centers has posed a serious obstacle to economic development. The report also mentioned that the displacement of able-bodied men and women has had a serious impact on agricultural growth. The authors reported that food production has been adversely affected by the conflict. He also reported the displacement of small landowners and the impact of this displacement on agricultural production.

Upreti (2004) "The Price of Neglect" argues that the major causes of Nepalese conflict are structural inequalities, rampant poverty, geographical disparity, injustice and bad governance. He also reported that since the inception of the conflict more than 8,500 people have lost their lives and thousands of others have been the victims of conflict. He also reported that political, constitutional, geographical and socio-economic are the root causes of the conflict. In the political causes he explained that all the people widely supported the democratic movement of the 1990 and, consequently, the multiparty democracy was restored. General public had great expectation from the 1990's political change. But the political parties did not govern the country based on the democratic ideals. That made the general public very frustrated. This frustration became a mighty ground to undertake armed rebellion. According to him some scholars and activists argue that 1990's constitution was not able to deal with some fundamental issues that had to be addressed by multiparty democracy. This constitution also promoted majoritarian institutions, which discriminated against minority religious groups, women, low caste people etc. He also reported that geographical disparity; structural inequality, injustice and discrimination had

heavily fuelled the Maoist conflict. He found out the two reasons to growth of Maoist insurgency. First, they (Maoist) effectively and successfully utilized media, opinion leaders, frustrated masses (e.g. Ex-bonded labourers, unemployed youth, etc.) and poor, marginalized and underprivileged groups. The second reason is the complete failure of the government to govern according to democratic ideals. The government also failed to recognize the gravity of the problem associated with geographical areas.

He explained the socio-economic cause is one of the root cases of the conflict. According to him social exclusion, acute inequalities, absolute poverty, lack of access to resources and failure of political structure to address these issues made the Nepalese society extremely vulnerable to conflict and mass movements like the Maoist 'people's war'. Deep-rooted social clearages in terms of caste, ethnicity, gender and regional, cultural, linguistic and religious forms of discrimination provided fertile ground to escalate the conflict.

He further reported that centralization and regional imbalance skewed distribution, access and control of natural and other productive resources, domination influences of religiously and culturally biased traditional Hindu values and culture. Discrimination against women, ethnic minorities, so-called lower caste or dalits has created feeling of injustice, frustration and fuelled conflict escalation. Definitive action on radical land reform was not taken. The performance of privatization was extremely poor; market price of basic need foods was promptly hiked.

He said that by the conflict there was positive and negative effect in our society. There was more negative effect than positive in our society. He also reported that women, children and elders, farmer- labor, villagers, young manpower, development and

construction. Industry, tourism, natural resources and bio- diversity had been badly affected. In his study he reported that there was negative impact on the farmers by this conflict. Maoist pressured the landlords and rich people to leave their land and provide that land to the poor landless people, and then Maoist started group farming system. But the Maoist high jacked the production. So the farmers felt that they were insecure. As a result many farm owners reduced the area of plantation. Farmers could not get basic inputs of agriculture such as, fertilizer, seed, technical knowledge and other inputs. Farmers also could not get proper price of their production.

2.6 Epilogue

From the above literature review we have known hat major causes of Nepalese conflict are the structural inequalities, poverty, geographical disparity, injustice, bad governance and lack of appropriate opportunities. The conflict is also the cause of the centralization, regional imbalance and lack of access of the people over the natural resources, likewise domination against women ethnic groups and lower castes etc also helped the Maoist insurgency. The literature review shows that conflict has caused positive and negative effect but more negative. It has affected the socio-economic transformation of society. Maoist' taxation over the production, lack of adequate human power, uncertainties of production etc discouraged the farmers to farm. The conflict affected the economy through destruction, disruption, diversion and disserving. And it reduced the GDP. Maoists blocked the banking activities in the rural areas due to which there was lack of investment in agriculture sector and as a result production as well as national economy decreased.

The literature review indicates the above given things but this research differs slightly from the precious discussion. They have taken the agriculture sector as a whole,

which includes all the crops, cultivated in Nepal but this research is concerned only with the limited crops and circumstances. This research is concerned with the comparative study of area, production and productivity of major cereal crops in conflict concentrated and less conflict concentrated districts.

CHAPTER 3

RESEARCH METHODOLOGY

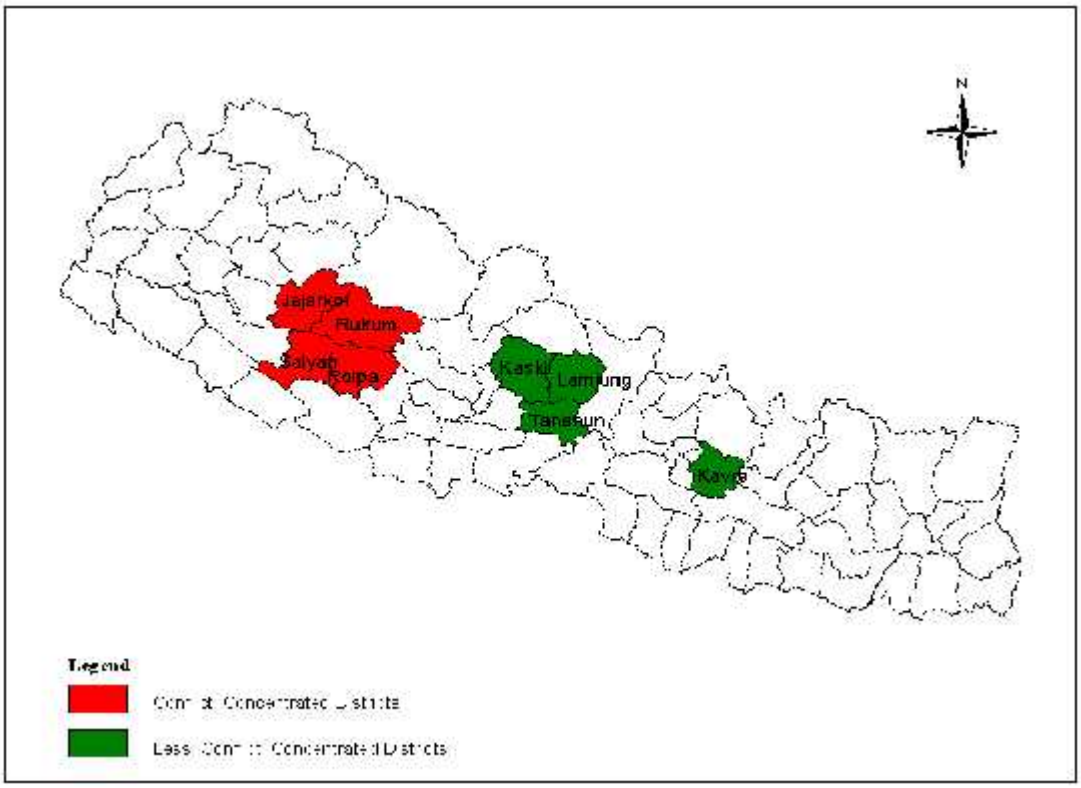
This chapter describes the research sites, the method of data collection and the framework for the analysis of the data.

3.0 Description of the research site

Nepal is a very small country. Geographically it is divided into terai, hills and mountain region. Politically the country is divided into 75 districts. The Maoist conflict has spread across the country and now they are virtually present in all the 75 districts. But some districts are seriously affected and some are less affected. This study does not cover all the districts. For the purpose of the study a total number of 8 districts were selected. The selected districts are divided into two groups. In first group four districts are taken from mid-western region as conflict concentrated districts. They are Rukum, Rolpa, Jakarkot and Salyan. These districts are comparatively underdeveloped, far from center Kathmandu, inhabited by poor people by neglected.

In the second group, other four districts are selected. Three districts are selected from the Western hills, which are Kaski, Tanahun, and Lamjung and one district is from Kavre in Central region. These districts are less conflict concentrated districts. All of these districts are hill districts, comparatively stronger in economic activities and also in availability of roads and other infrastructure. The location of the districts is shown in Map 1.

Map1. The selected conflict concentrated and less conflict concentrated districts of Nepal under study



3.1 Description of individual districts selected in the sample.

In this section eight districts of conflict concentrated and less conflict concentrated districts having four districts in each are described according to its area, total population, occupation and ethnicity. Likewise the districts are described according to the land available for cultivation, actually cultivated land and major crops.

3.1.0. Rukum

Rukum is one of the districts of mid-western region. This district has an area of 2,877 square kilometers. The total population of this district was 1, 88,438 (CBS, 2001). The main occupation of a large number of people is agriculture. The climate of the district varies from sub-tropical, temperate to alpine. There is no access to all weathered metalled road. In Rukum district literacy rate is 49.5 percent in the year 2005, where female literacy in the same year was said to be around 28.6 percent. (INSEC, 2005) People of various ethnic groups live in Rukum district. The majority of population here is that of Magars. And major ethnic groups such as Thakuri, Chhetri, Brahmin, Jogi, Damai, Kami, Sarki and Newar, Gurung and Badi also are living in this district.

In this district total available land is 2, 90,674 hectares and 45,290-hectares land is suitable for arable agriculture. However, 28,415 hectares land is under cultivation. Similarly, 1, 36,452 hectares land is covered with forest. Rice, maize, millet, wheat and barley are the main cereal crops of this district. Among them rice, maize and wheat play the important role for their livelihoods. In FY 2004/05, 3,570 hectares land was planted with rice. Maize was planted in 18,650 hectares and wheat in 11,000 hectares. Oilseed and potatoes are main cash crops of this district. In FY 2004/05, oilseeds were planted in 790 hectares land and potato in 1,530 hectares of land (NIDI, 2006)

3.1.1 Rolpa

Rolpa district lies in mid-western region of Nepal. This district has a land area of 1,879 square kilometers. The total population of this district was 2, 10,004 (CBS, 2001). The main occupation of a large number of people is agriculture. The climate of the district is sub-tropical to temperate. The district has 83 kilometers of road. Around 52.84 percent people are literate where as woman literacy is only 22.88 percent (INSEC, 2005). People of various ethnic group and caste live in Rolpa district. The dominant caste is Magar and major ethnic groups are Thakuri, Chhetri, Brahmin, Gurung Limbu, and Tharu etc.

In this district total available land is 187150 hectares and 59,855 hectares land is suitable for arable agriculture. However, only 36,702 hectares land is under cultivation. Similarly, 94,097 hectares land is covered with forest (NIDI, 2006). Rice, maize, millet, wheat and barley are main cereal crops. In FY 2004/05, rice, maize and wheat were planted in 4,700 hectares, 11,190 hectares and 8,620 hectares respectively. Oilseed and potato are cash crops of this district. In FY 2004/05 oil seed and potato were planted in 110 hectares and 1,501 hectares respectively. (MOAC, 2005).

3.1.2 Jajarkot

Jajarkot also lies in mid-western region of Nepal. Its area is 2,230 square kilometers. The total population of this district was 1, 34,868 (CBS, 2001). The climate of the district varies from sub-tropical to alpine. The main occupation of most of the people is agriculture.

In this district total available land is 2,22,183 hectares and 38,222 hectares land is suitable for arable agriculture. However only 25,751 hectares land is under cultivation. Similarly, 1, 35,615 hectares land is covered with forest (NIDI, 2006). Rice, maize, millet,

wheat and barley are grown in this district. Rice, maize and wheat are the main cereal crops. In FY 2004/05 rice, maize and wheat were planted in 3,500 hectares, 8,830 hectares and 7,850 hectares, respectively. In the same fiscal year, total of 23,000 hectares land was covered by all cereal crops. Oilseed and potato are cash crops of this district. In FY 2004/05 oilseed was planted in 285 hectares and potato was planted in 615 hectares (MOAC, 2005).

3.1.3 Salyan

Salyan is one of the districts of mid-western region. This district has a land area of 1462 square kilometers. The total population of this district was 2, 13,500 (CBS, 2001). The total length of the road is 125 kilometers. In this district 44.45 percent people are literate whereas woman literacy is 40.77 percent (INSEC, 2005). People of various castes live in this district. Major ethnic groups are Chhetri. Brahmin, Thakuri, Magar, Newar, Sunuwar, Kami, Damai, Gaine, Badi, Raute etc.

The climate of the district is sub-tropical to temperate. The main occupation of most of people is agriculture. In this district total available land is 1,50,102 hectares and 52,674 hectares land is suitable for arable agriculture.however 34,383 hectares land is under cultivation. Similarly, 79,598 hectares land is covered with forest (NIDI, 2006).

Agricultural crops grown in this district are rice, maize, millet, wheat and barley. Rice, maize and wheat are the main cereal crops. In FY 2004/05, rice maize and wheat was planted in 6,959 hectares, 21,570 hectares and 11,578 hectares respectively. In the same fiscal year, 43,027 hectares land was planted with the cereal crops. Oilseed and potato are the cash crops of this district. In FY 2004/05 oilseeds were planted in 710 hectares and potato was planed in 1,180 hectares (MOAC, 2005).

3.1.4 Kaski

Kaski district lies in western development region of Nepal. This district has a land area of 2017 square kilometers. The total population of this district was 3, 80,527 (CBS, 2001). The total motorable road in this district is 400.96 kilometers. In this district, 71.9 percent people are literate. Women literacy is 61.5 percent (INSEC, 2005)

People of various ethnic groups and castes live in Kaski district. Prominent castes are Brahmin, Chhetri, Gurung, Magar, Newar, Tamang,Thakali, etc. Pokhara considered to be the tourist capital of Nepal is the headquarter of the district.

The climate of the district is from sub-tropical to alpine. The main occupation of most of the people is agriculture. Some people are engaged in trade and tourism. In this district total available land is 2,13,165 hectares and 43,003 hectares land is suitable for arable agriculture. However, 27,021 hectares land is under cultivation. Similarly 89,943 hectares land is covered with forest (NIDI, 2006). Rice maize, millet, wheat and barley are grown in this district. Rice, maize and wheat are the main cereal crops. In FY, 2004/05 rice, maize and wheat were planted in 18,609 hectares, 16,035 hectares, and 9,091 hectares respectively. Oilseed, potato and sugarcane are the cash crops of this district. In FY 2004/05, oilseed was planted in 502 hectares. Potato and Sugarcane was planted in 970 hectares and 20 hectares respectively (MOAC, 2005).

3.1.5 Tanahun

Tanahun district also lies in western region of Nepal. The district has an area of 1,546 square kilometers land. The total population of this district is 3, 15,237 (CBS, 2001). The total motorable road in this district is 684 kilometer. In this district 61.66 percent people are literate. Women literacy is 55.6percent. (INSEC, 2005) People of various ethnic

groups and castes live in Tanahun district. Major ethnic groups are Magar, Gurung, Brahmin, Chhetri, Damai, Kami Thakali etc.

The climate of the district is sub-tropical to temperate. The main occupation of most of people is agriculture. In this district total available land is 1,56,877 hectares and 66,100 hectares land is suitable for arable agriculture. However, 40,309 hectares land is under cultivation. Similarly 85,361 hectares land is covered with forest (NIDI, 2006).

Rice, maize, millet, wheat and barley are grown in this district. In FY 2004/05, rice maize and wheat was planted in 16,713 hectares, 21,960 hectares, and 2,300 hectares respectively. In the same fiscal year 47,533 hectares land was planted with all the cereal crops. Oilseed, potato, sugarcane are the cash crops of this district (MOAC, 2005).

3.1.6 Lamjung

Lamjung district lies in western region of Nepal. This district has an area of 1,692 square kilometers. The total population of this district was 1, 77,149 (CBS, 2001). The total motorable road in this district is 119 kilometers. In this district 56.61 percent people are literate. Women literacy is 46 percent (INSEC, 2005). People of various castes and ethnic groups live in Lamjung district. Gurungs are dominant caste. Brahmin, Chettri, Newar, Damai, Kami, etc. are other ethnic groups in this district.

The climate of the district is from sub-tropical, temperate, cool-temperate to alpine. The main occupation is agriculture. In this district total available land is 1,70,872 hectares and 43,874 hectares land is suitable for arable agriculture. However, only 28,769 hectares land is under cultivation. Similarly, the forest area is estimated to be 84,316 hectares in this district (NIDI, 2006).

Rice, maize, millet, wheat and barley are grown in this district. Among them rice, maize

and wheat are the main crops. In FY 2004/05, rice maize and wheat was planted in 16,025 hectares, 15,935 hectares and 4,000 hectares respectively. In the same fiscal year a total of 44,108 hectares land was planted with the cereal crops.

3.1.7 Kavre

Kavre district lies in the central region of Nepal. The district has an area of 1,396 square kilometers. The total population of this district was 3, 85,672 (CBS, 2001). The total motorable road here is 802 kilometer. In this district 63.75percent people are literate and women literacy is 52.53 percent (INSEC, 2005). People of various castes and ethnic groups live in Kavre district. The majority of the people living in this district are Tamang. Brahmin, Chhetri, Danuwar, Majhi, Pahari and Dhami are other ethnic groups of this district.

The climate of the district is from sub-tropical to temperate. The main occupation of a large number of people is agriculture. In this district total available land is 1,40,486 hectares and 61,599 hectares land is suitable for arable agriculture. However, 36,442 hectares land is under cultivation. Similarly, 73,801 hectares land (NIDI, 2006).

Rice, maize, millet, wheat and barley are the cereal crops of this district. In FY 2004/05, rice was planted in 11875 hectares, Maize was planted in 23,200 hectares and wheat was planted in 12,950 hectares. In the same fiscal year area planted with cereal crops was 52,285 hectares.

3.2 Research design

Basically, this study is a comparative study between two sets of districts in Nepal. First set of districts includes Rukum, Rolpa, Jajarkot and Salyan as the conflict

concentrated districts. The second set of districts includes Kaski, Tanahun Lamjung and Kavre as less conflict concentrated districts.

The data related to the study were obtained from the secondary sources. The time frame for the data is from 1995/96 to 2004/05. This period is the period when the conflict was still going on. The data of the study is to analyse in the descriptive and comparative by using simple statistics methods.

3.3 Method of data collection

For this study only secondary information is used. Government of Nepal, Ministry of Agriculture and Co-operatives, Agri- Business Promotion and Statistic Division published the information of agricultural production, area and productivity annually in statistical Information on Nepalese Agriculture. This publication includes data for all crops as well as livestock production. It also publishes other agricultural related information such as investment, inputs, price, and area irrigated etc. For the purpose of this study major three important cereal crops rice, maize and wheat are chosen from the selected districts. The data of area, production and productivity are presented over a period of 10 years beginning 1995/1996 and ending 2004/2005. Since Ministry of Agriculture and Co-operatives is the authorised institution to provide the agricultural related data, which are also used by several other government, and non-governmental organisations.

3.4 Data processing

For the study, the district wise data of the cropped area, production and productivity are grouped into conflict concentrated and less conflict concentrated district groups. The percent annual change, average smoothing data (average of two years) and growth rates are analysed. The way of presentation of area, production and productivity for

these crops are presented in tabular and graphical form as well.

3.5 Reason for crops selection

Rice, maize and wheat are the major staple food in Nepal. Rice is the most important cereal crop in terms of area planted as well as amount of production in Nepal. It is a crop of flat terai as well as the fertile irrigable land in the hill districts and main staple food. Maize is the second most important cereal crop mainly planted in the hills. It is used as staple food as well as animal feed. Wheat is the third important cereal crop, which is planted in winter. These are the main staple food of the Nepalese people. The livelihood of the Nepalese people depends upon the success and failure of these crops. Peoples are ready to plant these crops at any cost for their food security. The APP (1995) aims at poverty reduction by increasing agricultural production and productivity using quality seeds, fertilisers and mechanisation. These are the important income sources of the Nepalese people and their life is dependent on these crops. These crops are playing an important role for ensuring food security and improving national economy in the country.

CHAPTER 4

ANALYSES OF THE DATA

This chapter describes the glimpse of major cereal crops (rice, maize and wheat) including their area coverage, production and productivity status of selected districts during the last ten years between 1995/096 to 2004/05 fiscal year.

4.0 Glimpse of major crops

This section describes the valuable information of three important cereal crops (rice, maize and wheat).

4.0.1 Rice

Rice (*Oryza sativa*) is the number one staple food crop in Nepal. It is grown in all the three major agro-ecological regions i.e. Terai and inner Terai, hills and mountains region. The distribution of the area in three ecological regions such as terai, hill and mountain is 73 percent, 24 percent and 3 percent, respectively of the total rice area in the country (Basnet, 2004). Rice is cultivated in the diverse agro-climatic ranges of Nepal at differing altitudes, topography, climate condition, deep waterlogged land as well as several edaphic situations. The rice plays a significant role in the national economy, contributing 20 percent to the agricultural GDP in the country. It accounts 58 percent of the total food grain production and more than 50 percent of the agricultural area. It also meets more than 50 percent of the total calories requirement of the Nepalese people (Basnet, 2004). The history of rice cultivation stems from the pre historic Vedic time and is mentioned even in the ancient literature of 2800 BC (NARC, 1997). Rice is produced by different ethnic groups of people in Nepal. It is used not only as staple food but also for several other

industrial and cultural purposes.

4.0.2 Maize

Maize (*Zea mays. L*) is the second most important crop after rice. It is cultivated in upland area as a rainfed crop and even the marginal land. The maize is also cultivated in terai as cash crop mostly during the winter season. It is the main staple crop of hills and mountains regions. Nearly 80 percent of area under maize is found in the hill. The maize in hills is primarily used for human food. The use of maize is increasingly being used in animal and poultry feed. The average per capita maize consumption is estimated at about 61 kg/year in Nepal (CIMMYT, 2001).

4.0.3 Wheat

Wheat (*Triticum aestivum .L*) is the third important cereal crop of Nepal and is grown all over the country. More than 85 percent (5, 67,000 hectares) of wheat grown in the country follows rice. It occupies 22 percent of total cultivated area and contributes 17.3 percent of the total cereal production in the country. The per capita wheat consumption has increased from 17.4 to 54 kilogram from 1972 2002. It is consumed in the form of *chapattis*, bread, noodles, biscuits, cookies and other products. Overall wheat productivity has steadily increased from 1,410 kg/ha in 1990-1991 to 1886 kg/ha in 2001-2002. The productivity growth is 2.38 per annum since 1990-1991 (NARC, 2005).

4.1 Trend of the area, production and productivity of rice crop

This section includes the data of ten years (1995/096-2004/05) of rice and its area, production and productivity with two years moving average and calculated the percentage.

4.1.0 Situation of the area under rice crop

Rice is considered to be a rich man's crop in the hills of Nepal. The rice production is done generally in most fertile prime land and in irrigated condition. Additional land if brought under irrigation would extend rice production. Investment in irrigation as well as the well being of people indicates a positive change in rice cultivation. In this context, the total area and its trend in the conflict concentrated and less conflict concentrated districts were analyzed and presented in Table 1.

Table 1. Percentage changes in rice area in the conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Area (ha)	Annual change smoothered data (percent)	Area (ha)	Annual change smoothered data (percent)
1995/96	20000	-	52750	-
1996/97	19000	-	53630	-
1997/98	18959	-2.67	55325	2.42
1998/99	19020	0.05	55650	1.85
1999/00	17722	-3.26	57791	2.22
2000/01	17846	-3.20	61643	5.28
2001/02	17261	-1.30	63314	4.62
2002/03	18520	1.92	62740	0.88
2003/04	18520	3.52	62550	-0.61
2004/05	18729	0.56	63222	0.38
Change with base year		-6.35		19.85

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

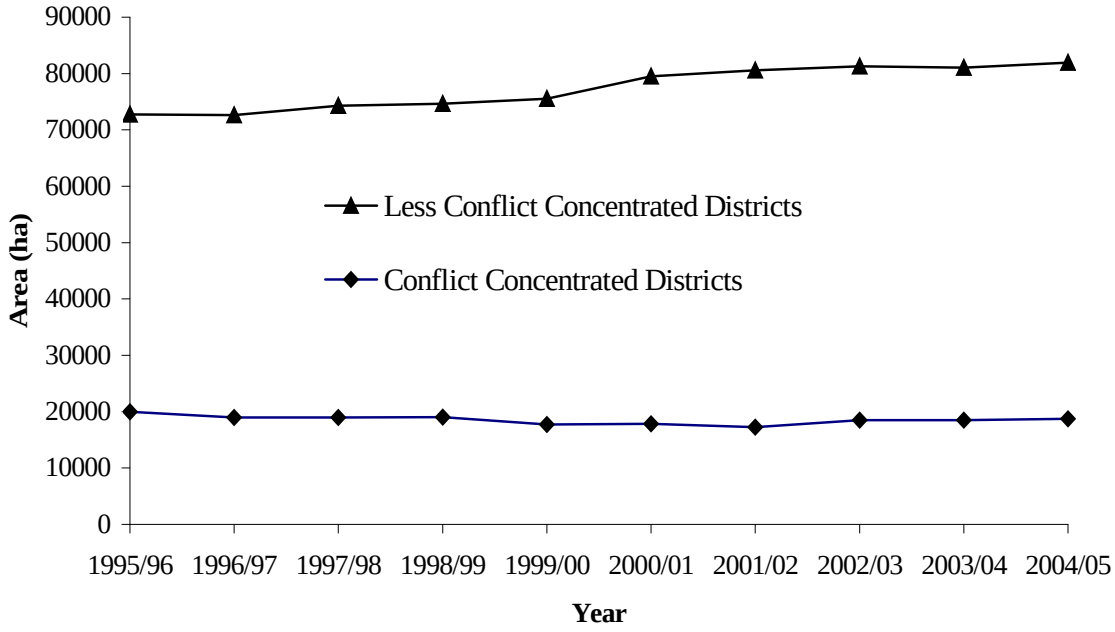
The area under rice cultivation in conflict concentrated districts was 2000 hectares in the fiscal year 1995/096. In the fiscal year 1997/098 the area under rice cultivation declined by 2.67 percent. Since then it had declined continuously up to fiscal year 2001/02.

The area was declined at a high rate of 3.26 percent in the fiscal year 1999/00 and at a low rate of 1.3 percent in the fiscal year 2001/02. The area under rice cultivation in the final year decreased by 6.35 percent in comparison to the base year 1995/096 where as the increment in the less conflict concentrated districts was increased by 19.85 percent. The main reason for the decline in area cultivation might be the shortage of agricultural labors and inputs caused by heavy insurgents between the government and Maoist rebels. The area started to increase from the fiscal year 2002/03 but at a marginal rate.

In the less conflict concentrated districts the rice-cultivated area seems to be continuously increasing during the study period except in the year 2002/03. It was increased by 5.28 percent at a high rate in 2000/01 and decreased by a minimum rate of 0.61 percent in the 2003/04. The reason of decreased in area in that year might be non –political rather than conflict, which is beyond the area of the present study. The monsoon rain is the most important factor that affects the area under rice. In a good monsoon both areas under production and productivity increase, therefore, a positive change in the less conflict concentrated districts could be the contribution of the monsoon. However, the current study doses not cover the climatic parameter. It can be concluded that there remained a significant and negative impact of conflict on areas of rice cultivation in conflict concentrated districts.

The time series data is presented graphically for both the conflict concentrated and the less conflict concentrated districts in Figure 1.

Figure 1. Trend of rice cropped area (ha) in conflict concentrated and less conflict concentrated districts during 1995/96-2004/05



Above figure indicates that the cultivated area under rice in the less- conflict concentrated districts is higher than that of the conflict concentrated districts. The annual incremental increase in the area is higher in the less-conflict concentrated districts, than that of the conflict concentrated districts, which might be attributed to access of labors and other agricultural inputs. While in the conflict concentrated districts the area under rice cultivation decreased because of unavailability of labor forces where young people migrated to India and other secure places for searching income and employment opportunities for their livelihoods. Thus, there was a limited farming activity during the

periods.

4.1.1 Level of production of rice crop

The level of rice production depends on area planted, improved seeds, use of agricultural inputs, irrigation and climatic condition. However the production of rice depends upon the investment per unit area and adoption of improved technologies. The conflict concentrated area was not easily accessible from the central government and the service delivery agencies in the district headquarters. The investment made by individual was the only means that contributed an economic growth in the area. In this context, the productions of rice for the conflict concentrated and the less conflict concentrated districts were analyzed and the data is presented in the following Table 2.

Table 2. Percentage changes in rice production in conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Production (mt)	Annual change smoothered data (percent)	Production (mt)	Annual change smoothered data (percent)
1995/96	44750	-	115300	-
1996/97	36830	-	123680	-
1997/98	36420	-10.21	126644	4.75
1998/99	37220	0.53	131277	3.03
1999/00	36091	-0.45	140185	5.25
2000/01	38665	1.97	153891	8.33
2001/02	34780	-1.75	178019	12.87
2002/03	39119	0.62	171700	5.37
2003/04	39119	5.87	172014	-1.72
2004/05	43684	5.83	188198	4.80
Change with base year		-2.38		63.22

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

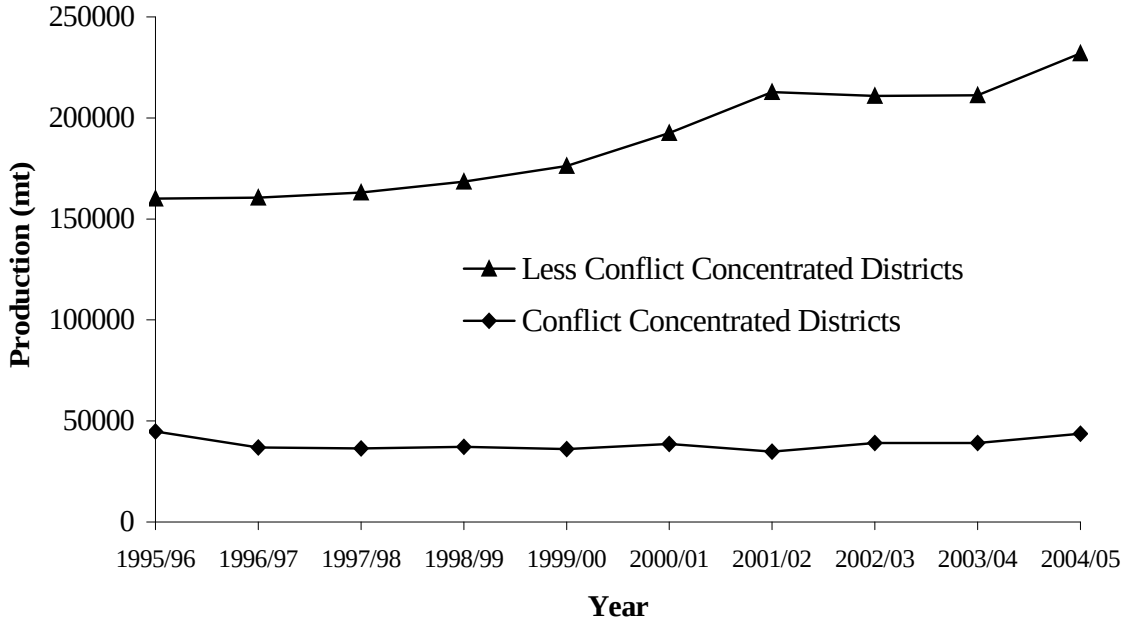
Above table shows that in conflict concentrated districts rice production in the final

year decreased by 2.38 percent in comparison to the base year 1995/096. There was largest decrease by 10.21 percent in the fiscal year 1997/98 and a small percentage decrease in the fiscal year 1999/00 by 0.45 percent. From the fiscal year 2002/03 the production increased and it was increased by 5.83 percent in the fiscal year 2004/05.

In respect to the production trend of rice in less conflict concentrated districts, it was observed that rice production increased during the study period except in the year 2003/04.The factor might be associated with weather. The rice production increased by 63.22 percent in comparison to the base year 1995/096.This fact proves that there remained significant and inverse impact of conflict on rice production in conflict concentrated districts but no negative impact observed in less conflict concentrated districts. The data is presented in the graphical form in Figure 2. The graph shows a clear production trend.

The above analysis shows that the conflict has affected the level of crop production.

Figure 2. Production (mt) trend of rice crop in conflict concentrated and less conflict concentrated districts during 1995/1996-2004/05



The production of rice decreased in the conflict concentrated districts. But actually there was an increase in the production significantly in the less conflict concentrated districts. It might be due to the decrease in cultivated area in the conflict concentrated districts. Conflict arose the problems like unavailability of agricultural inputs, lack of technical know-how, and labor shortage and less economic activities. In those areas, there might be problems of food security because farming is the main source of livelihoods of the majority of people.

4.1.2 Level of the productivity of rice crop

The productivity of rice also depends upon the new improved varieties, quality of seeds, improved technologies, skilled labors, agricultural inputs, irrigation and climatic condition. In this context, the productivity of rice in the conflict and less–conflict concentrated districts was analyzed and the data is presented in the following Table 3.

Table 3. Percentage changes in rice productivity in the conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Productivity (mt/ha)	Annual change smoothered data (percent)	Productivity (mt/ha)	Annual change smoothered data (percent)
1995/96	2.24	-	2.19	-
1996/97	1.94	-	2.31	-
1997/98	1.92	-7.58	2.89	15.70
1998/99	1.96	0.48	2.36	1.02
1999/00	2.04	2.98	2.43	-8.86
2000/01	2.17	5.25	2.50	2.87
2001/02	2.01	-0.51	2.81	7.84
2002/03	2.11	-1.30	2.74	4.53
2003/04	2.11	2.36	2.75	-1.11
2004/05	2.33	5.21	2.98	4.38
Change with base year		4.48		36.23

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

The above table shows that average productivity of rice, in conflict concentrated districts rose by 4.48 percent as compared to 36.2 percent in less conflict concentrated districts (Table 3). This fact proves that conflict made negative impact on the productivity of rice in conflict concentrated districts. The food balance was also negative as the result of the low productivity of crops. Therefore, imports of food grains from neighbor districts were needed where there was food surplus.

From the fiscal year 1997/98 to 1998/99 the productivity of rice crop remained almost same 1.9 mt/ha where as after 1999/00 till 2004/05 it was observed 2 mt/ha which remained consistent (Table 3). However, the productivity of rice was estimated to be 1.94 mt in the fiscal year 1996/97 and 2.33 mt in 2004/05, which is increased by 4.48 percent. The productivity rice was decreased by 17 percent and increased 6 percent in the conflict concentrated district and less conflict concentrated districts, respectively as compared to national productivity in the fiscal year of 2004/05 (Appendix 1).

The trend of productivity in the less conflict concentrated districts was consistent which was around 2 mt/ha. But the productivity of rice in conflict concentrated districts was fluctuating in some years but increased consistently from the fiscal year 2002/03 till 2004/05.

Figure 3. Productivity (mt/ha) trend of rice crop in conflict concentrated and less conflict concentrated districts during 1995/96- 2004/05

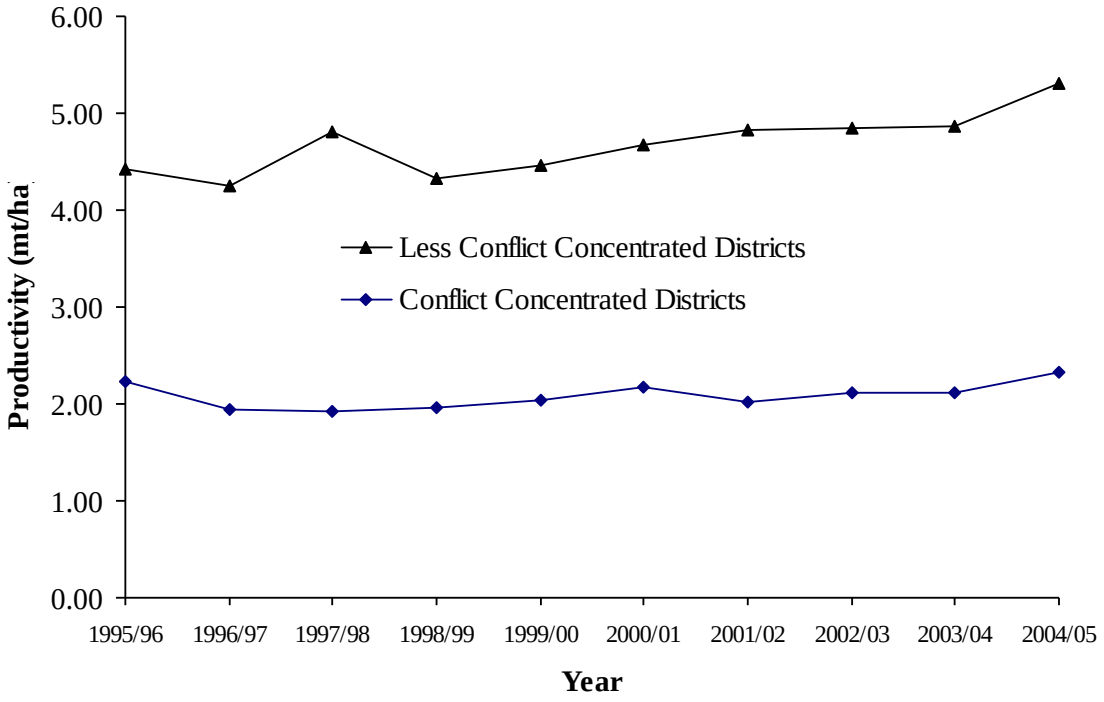


Figure 3 shows higher productivity of rice in the less conflict concentrated districts than the conflict concentrated districts. The trend of productivity in the less conflict concentrated districts was consistent which was around 2 t/ha. But the productivity of rice in the conflict concentrated districts was fluctuating in some years but increased consistently from the fiscal year 2002/03 till 2004/05.

In the conflict concentrated districts, owing to a direct threats and (attacks by Maoist or by security forces), insecurity, and diminished access to land and other inputs that have reduced the ability to undertake normal farming activities. Eventually it led to involuntary migration. In some conflict districts, owing to general sense of insecurity of those who remained but they did not have human resources to farm and also could not save seeds for next season farming. There was also fear amongst the people that the crops might

be removed from the field because of insurgents. Many young rural people had left the villages in search of employment opportunities and income. Agricultural land is not under cultivation and the productivity of land has declined. The violent conflict mostly affected women and children in the society. Women are isolated from their family members due to conflicts. They had to bear economic burden for livelihoods because of limited economics activities. This might be the reason for decreasing the area, production and productivity of cereal crops like rice in the conflict concentrated districts over the ten years period.

4.2 Trend of the area, production and productivity of maize crop

This section includes the data of ten years (1995/096-2004/05) of maize and its area, production and productivity with two years moving average and calculated the percentage.

4.2.0 Situation of the area of maize crop

Maize is the most important staple crop in the hills, terai and mountain of Nepal. The maize is cultivated specifically in upland (*Bari* land), in steep slopes of hills and mountains. In irrigated condition, the rice crop is preferred over maize crop. However, in the hills maize is a means of survival that meets the need of food for large mass of people. It is also a very important source for animal feeds. Information on area, production and productivity of maize both under the conflict concentrated and less conflict concentrated districts were analyzed and the data is presented in the following Tables 4, 5 and 6.

Table 4. Percentage changes in maize area in the conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Area (ha)	Annual change smoothered data (Percent)	Area (ha)	Annual change smoothered data (Percent)
1995/96	56030	-	68880	-
1996/97	56430	-	70250	-
1997/98	56805	0.69	70785	1.37
1998/99	56785	0.31	70970	0.51
1999/00	60208	3.00	74834	2.86
2000/01	60230	2.94	74905	2.70
2001/02	59718	-0.41	75235	0.27
2002/03	60230	0.00	75110	0.14
2003/04	60230	0.43	74800	-0.29
2004/05	60240	0.01	77130	1.35
Change with base year		7.51		11.97

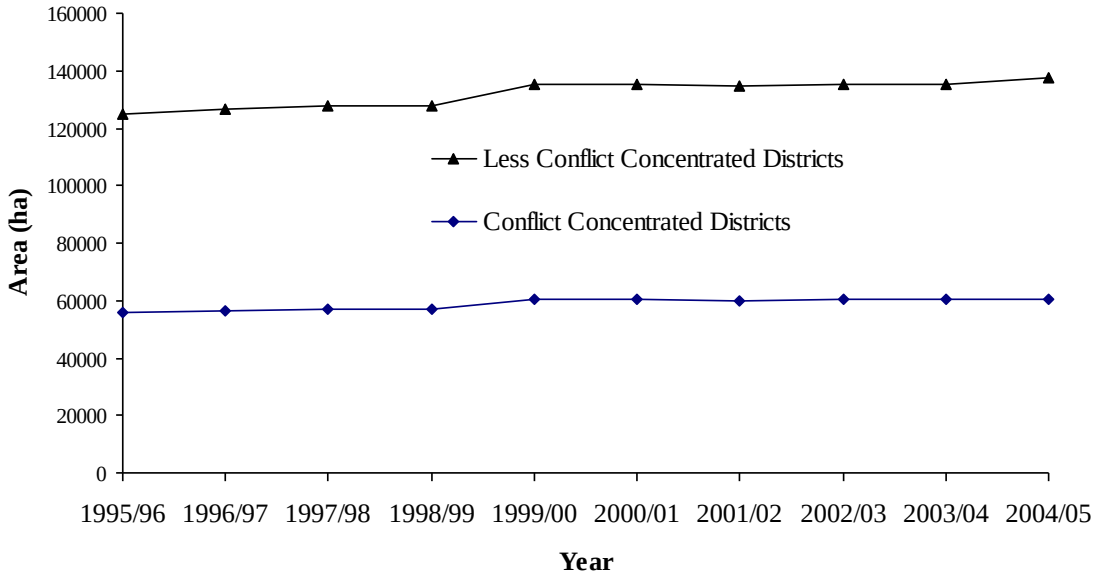
Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Above table shows that the maize area in the conflict concentrated districts over the ten-year periods increased positively from 1996/97 to 2000/01. There was decrease in area only in two fiscal years 1998/99 and 2001/02 otherwise each year it was increasing. In the fiscal years of 2001/02 and 2002/03 there was slight decreased in the area but it was not significant. The area decreased by 0.41 percent in the fiscal year 2001/02 it might be due to long period of drought.

For the less conflict concentrated districts the area allocated to maize increased from 68880 hectares in 1995/96 to 77130 hectares in 2004/05, which was almost 12 percent. But it decreased by 0.29 percent in 2003/04. After 2004/05 it increased by 1.35 percent as compared to average area of maize in the fiscal year 2003/04. The average

percent change of maize between two regimes remained different. In conflict concentrated regime, it remained 7.51 percent whereas in the less conflict concentrated it was only 11.97 percent. The maize area in conflict concentrated and less conflict concentrated districts during ten years period are illustrated in graphical form in figure 4.

Figure 4. Trend of maize cropped area (ha) in conflict concentrated and less conflict concentrated districts during 1995/1996-2004/05



The above figure also helps us to conclude that there was increase in the area of maize cultivation for both the groups of different districts. The maize crop is considered to the poor man cereal in the mid-hills so the expansion area under maize cultivation is more or less positive in a trend. Since food security and rural livelihoods in both the conflict and less conflict concentrated district is a crucial issue.

4.2.1 Level of the production of maize crop

Maize is the principal crop of hill areas and is used for home consumption. Being the main crop of the Nepalese people, the production of maize is directly related with food security and poverty reduction. Maize production depends upon improved verities as well as other agricultural inputs and climatic condition. It is cultivated in both irrigated uplands

and marginal land. In this context, the productions of maize for the conflict concentrated as well as less- conflict concentrated districts were analyzed and the data is presented in the following Table 5.

Table 5. Percentage changes in maize production in the conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Production (mt)	Annual Change smoothered data (percent)	Production (mt)	Annual Change smoothered data (percent)
1995/96	89110	-	107670	-
1996/97	89720	-	108380	-
1997/98	90850	0.97	118564	5.04
1998/99	89419	-0.17	124150	6.95
1999/00	104234	7.42	149352	12.69
2000/01	104737	7.91	151375	9.95
2001/02	103411	-0.39	155681	2.11
2002/03	103980	-0.36	122435	-9.43
2003/04	103980	0.27	157866	0.79
2004/05	109727	2.76	181422	21.04
Change with base year		23.13		68.49

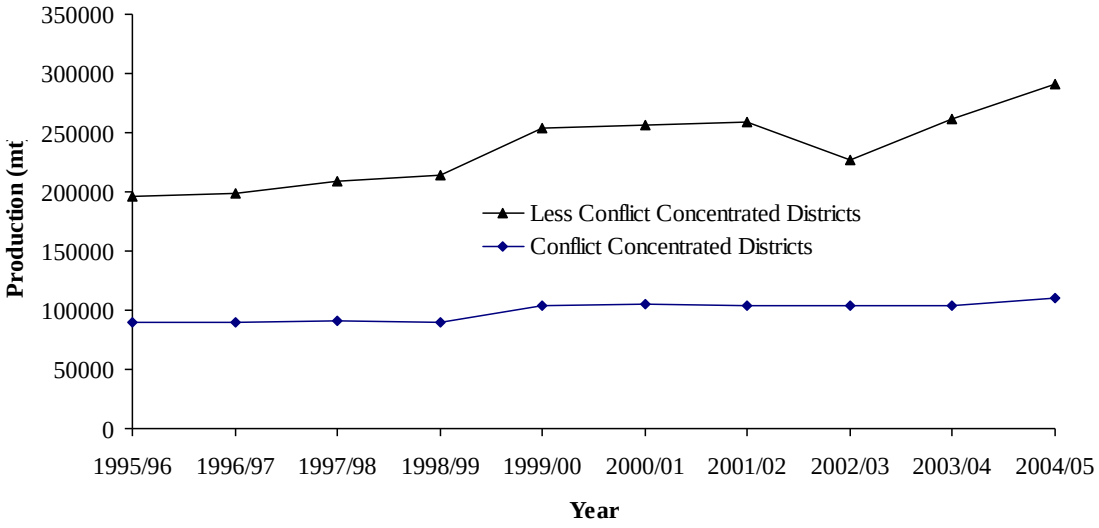
Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

The above table shows that maize production increased by 23.13 percent in an average during the study period even if it declined in the fiscal year 1998/99, 2001/02 and 2002/03 by 0.17, 0.39, and 0.36 percent in these years respectively. On the other it was increased by a high rate of 68.49 percent on an average in the less conflict concentrated districts during that period. The production rose marginally in conflict concentrated districts as compared to others. In the less conflict concentrated districts there was a positive trend on maize production except in the fiscal year 2002/03. This proves that conflict made negative impact in the production of maize though the production increased.

The production trend over ten year periods in conflict concentrated and less conflict

concentrated districts are also depicted in Figure 5.

Figure 5. Production (mt) trend of maize crop in conflict concentrated and less conflict concentrated districts during 1995/96 -2004/05



It can be interpreted that the trend of maize production in the less conflict concentrated districts was at increasing trend till 2001/02. But the production decreased in 2002/03 only because the area decreased by low figure in that particular year as compared the previous year. There might be some other reasons in the reduction of the area of cultivation such as late monsoon or persistence of long period of drought during the year. Likewise, the trend of maize production in the less conflict concentrated districts again was at normal trend in both the years of 2003/04 and 2004/05.

4.2.2 Level of the productivity of maize crop

The productivity of maize is a function of improved varieties, quality seeds, and agricultural inputs like fertilizers, improved practices, skilled labor, irrigation and climatic conditions. The productivity of maize in the less conflict concentrated district was expected to be high as compared to the conflict concentrated districts due to better availability of improved seeds and other inputs including labor availability in the districts.

The data for the productivity is given in following Table 6.

Table 6. Percentage changes in maize productivity in the conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Productivity (mt/ha)	Annual change smoothered data (percent)	Productivity (mt/ha)	Annual change smoothered data (percent)
1995/96	1.59	-	1.56	-
1996/97	1.59	-	1.54	-
1997/98	1.60	0.28	1.67	3.60
1998/99	1.57	-0.48	1.75	6.42
1999/00	1.73	4.16	2.00	9.37
2000/01	1.74	4.97	2.02	7.25
2001/02	1.73	0.01	2.07	1.83
2002/03	1.73	-0.36	1.63	-9.55
2003/04	1.73	-0.15	2.11	1.12
2004/05	1.82	2.75	2.35	19.30
Change with base year		14.46		50.64

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Table 6 shows an increase of productivity of maize in both conflict concentrated and less concentrated districts. However it was increased by a marginal rate of 14.46 percent in conflict concentrated and a high rare of 50.64 percent in less conflict concentrated districts in an average during the study period. The average productivity of maize crop in the conflict concentrated districts was not found consistent over the ten years period. It decreased in 1998/99, 2002/03 and 2003/04 at a negligible rate. The productivity of maize decreased by 11.5 and increased by 17.5 percent as compared to the national productivity in the conflict concentrated districts and less conflict concentrated districts, in the fiscal year of 2004/05 respectively (Appendix 1). The productivity trend of maize crop

over ten years in the conflict concentrated districts and less conflict concentrated districts are illustrated in figure 6.

Figure 6. Productivity (mt/ ha) trend of maize crop in conflict concentrated and less conflict concentrated districts during 1995/1996 -2004/05

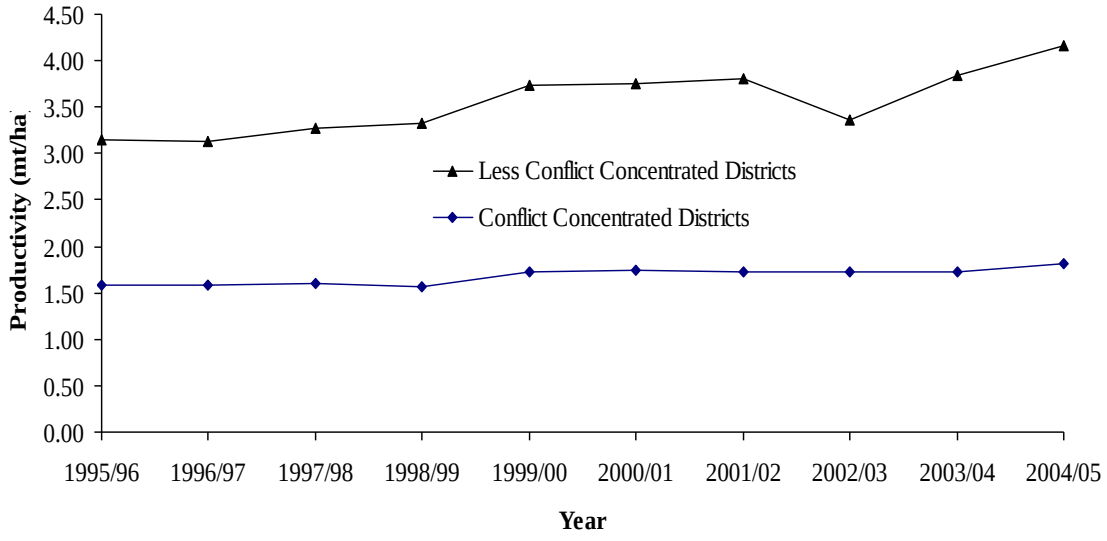


Figure 6 shows that the productivity of maize in both the conflict concentrated and less conflict concentrated district can be seen as a paralleled trend till 1997/98. There was no significant difference in both the regions but in the fiscal year 1998/99, the productivity of maize in less conflict concentrated districts indicated an increasing trend till 2001/02. From 2003/04, the productivity trend is increased to 2004/05 in less conflict concentrated districts. On the other hand, the productivity trend of maize in the conflict concentrated districts remained low than that of less concentrated districts.

Unavailability of labor forces after most of the able-bodied men either joined the Maoist forces or migrated to district headquarters and abroad to India or third countries.

Some of them were forced migrated voluntarily out of their villages from the conflict concentrated districts. The physical assets such as houses, livestock shed and other properties were damaged and destroyed by Maoist forces. Jobs in agriculture have also been affected by the conflict. Damage on agriculture extension services centre, banned for movement of field development workers like JT, JTA and officer in people level of these districts were devoid of access of agricultural inputs, technologies and resources. Consequently the rural people are supposed to be increasingly vulnerable to hunger, malnutrition and starvation in the conflict areas. As a result, the area, production and productivity of cereals crops like maize crop in these areas were found at a decreasing trend as compared to less conflict concentrated districts.

4.3 Trend of the area, production and productivity of wheat crop

This section includes the data of ten years (1995/096-2004/05) of wheat and its area, production and productivity with two years moving average and calculated the percentage.

4.3.0 Situation of the area of wheat crop

Wheat is the third most important cereal crop after rice and maize in Nepal. Generally wheat is grown with chemical fertilizers as an input and irrigated condition. Wheat is seeded after the rice harvest. There is a positive relationship between the rice and wheat in terms of production since both the crops require irrigation, therefore it is assumed that if the area under rice is increased there will be an increased on wheat cultivation area as well. Wheat is comparatively a new crop in terai and low hills of Nepal. Improved variety is used for wheat cultivation. It also consumes heavy doses of fertilizers as well as Farmyard Manure (FYM) compared to other cereal crops. Conflict has a significant impact on wheat cultivation. Table 7 shows wheat area in the conflict and less- conflict

concentrated districts.

Table 7. Percentage changes in wheat planted area in the conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Area (ha)	Annual Change smoothered data (percent)	Area (ha)	Annual Change smoothered data (percent)
1995/96	37790	-	22030	-
1996/97	38734	-	20010	-
1997/98	38860	1.40	23820	4.26
1998/99	39025	0.38	23928	8.94
1999/00	41819	3.80	24113	0.61
2000/01	41819	3.46	24915	2.05
2001/02	41819	0.00	24870	1.54
2002/03	41819	0.00	24580	-0.67
2003/04	39200	-3.13	24580	-0.59
2004/05	39048	-3.42	28341	7.65
Change with base year		3.32		28.64

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

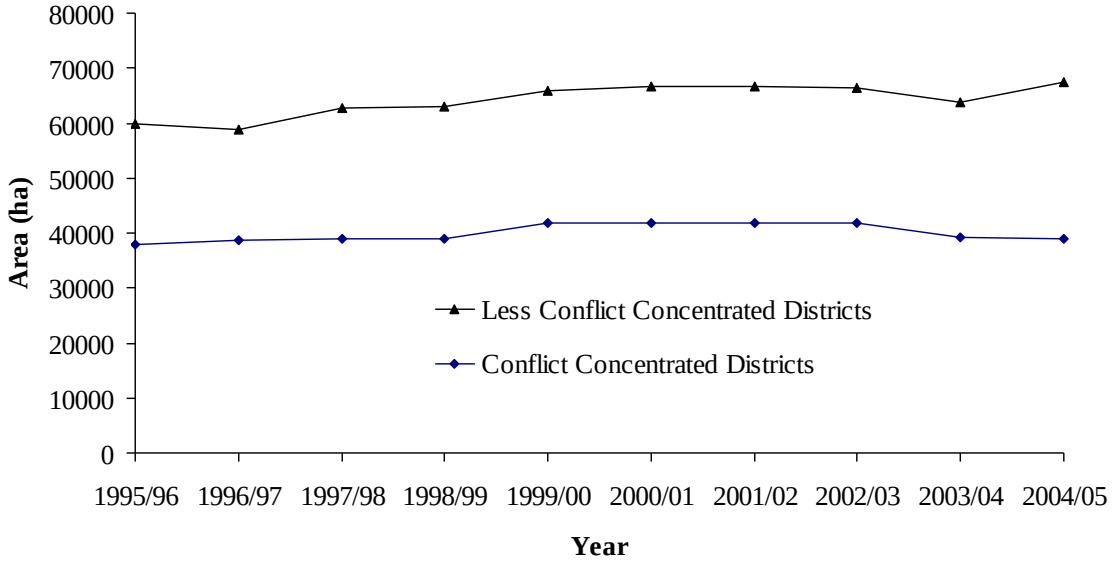
Data on table 7 shows that the average wheat cultivated area was higher than that of the less conflict concentrated districts. It might be due the land types and growing conditions of these particular districts. Besides irrigated condition, wheat crop was cultivated in rain fed condition in terrace land in these districts. In addition to this, after rice harvesting, the maize cultivation was more prevalent in less conflict concentrated district where as in conflict concentrated districts, after rice crop wheat is cultivated. This may be one of the reasons of higher cultivated wheat area in conflict concentrated than less conflict concentrated districts.

In conflict concentrated districts, area of wheat production increased by a marginal rate of 3.32 percent whereas it was increased by a high rate of 28.64 percent in less conflict

concentrated districts during the study period. This shows a negative impact of conflict on the area of wheat production in conflict concentrated districts.

From the fiscal year 1996/97 to 1999/00, the average wheat cultivated area was increased. From 2000/01 to 2002/03, there was no change in wheat cultivated area. The range of increase and decrease with the analytical period varied from -3.13 to 3.80 percent in conflict concentrated districts.

Figure 7. Trend of wheat cropped area (ha) in conflict concentrated and less conflict concentrated districts during 1995/1996-2004/05



Likewise in less the conflict concentrated districts, area under wheat was increased by 13 percent from the fiscal year 1996/97 to 2001/02. Average wheat planted area was decreased by 0.67 percent as compared to the previous year in the fiscal year 2002/03. In 2004/05, the average wheat planted area increased by 7.65 percent as compared to the wheat planted area in the fiscal year 2003/04. The areas covered by wheat crop in conflict concentrated districts was not observed in increasing trend from the fiscal year 2003/04 onward. The percent change of wheat area as compared to the base year, reported to be

3.32 and 28.64 percent respectively in both the areas. Food security situation in the conflict concentrated districts was very miserable due to lack of improved seeds, improved practices and less market price. The wheat cultivated area in the conflict concentrated and less conflict concentrated districts are shown in figure 7.

Figure 7 indicates that wheat cultivated area is higher in conflict concentrated districts than less conflict concentrated districts. This might not be due to conflict but cultivation of wheat after rice crop in terrace land or rainfed area may be the reasons of partial irrigation facilities and food habit of local people in the districts.

4.3.1 Level of the production of wheat crop

Wheat crop is grown in the terai, mid and high hills of Nepal. Wheat production depends upon the agricultural inputs, irrigation, new improved technology, and weather condition. In this context, the production of wheat for the conflict and less-conflict concentrated districts and the data is presented Table 8.

Table 8 also indicates that wheat production in conflict concentrated districts was higher compared to less conflict concentrated districts. This might be due to more area under wheat-cultivation in conflict concentrated districts than that of less conflict concentrated districts (Table 7). In conflict concentrated districts, the average wheat production showed an increasing trend between the fiscal year of 2000/01 and 2004/05. In the fiscal year 2004/05 the average production increased by 0.07 percent as compared to the previous year 2003/04.

Table 8. Percentage changes in wheat production in conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

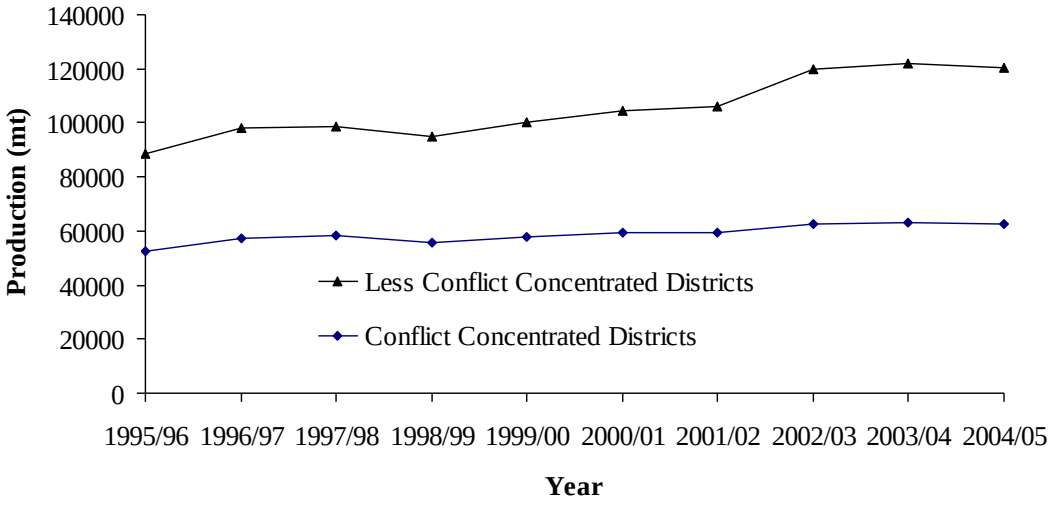
	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Production (mt)	Annual change smoothered data (percent)	Production (mt)	Annual change smoothered data (percent)
1995/96	52740	-	35920	-
1996/97	57530	-	40525	-
1997/98	58310	5.05	40245	5.66
1998/99	55427	-1.82	39446	-1.34
1999/00	58058	-0.22	42169	2.41
2000/01	59491	3.58	44899	6.68
2001/02	59561	1.28	46341	4.79
2002/03	62702	2.70	56926	13.18
2003/04	63025	2.83	59170	12.42
2004/05	62786	0.07	57634	0.61
Change with base year		19.04		60.45

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

The data indicates that the average production of wheat was increased by 19.04 percent in conflict concentrated districts and by 60.45 percent in less conflict concentrated districts. The average production was nearly three times greater in less conflict concentrated districts as compared to conflict concentrated districts.

Production trend of wheat in conflict concentrated and less conflict concentrated districts are depicted in figure 8.

Figure 8. Production (mt) trend of wheat in conflict concentrated and less conflict concentrated districts during 1995/96- 2004/05



This might be due to larger area of wheat cultivation in the conflict concentrated districts than the less conflict concentrated area. But according to the figure, the production trend of wheat can be observed to be a very steady trend from 1998/99 to 2004/05 whereas the production trend in less conflict concentrated districts showed a sharp increasing trend from 1995/96 to 2003/04.

4.3.2 Level of the productivity of wheat crop

The productivity of wheat can be increased by the use of agriculture inputs (such as improved seed, fertilizers), adoption of agricultural mechanization, skilled labor, irrigation and weather condition. How the productivity of wheat changed over the years that indicates an investment of inputs. In this context, the productivity of wheat in the conflict and less-conflict concentrated districts was analyzed and data is presented in the following table 9.

Table 9. Percentage changes in wheat productivity in conflict concentrated and less conflict concentrated districts during 1995/96-2004/05

	Conflict Concentrated Districts		Less Conflict Concentrated Districts	
Year	Productivity (mt/ha)	Annual change smoothered data (percent)	Productivity (mt/ha)	Annual change smoothered data (percent)
1995/96	1.40	-	1.63	-
1996/97	1.49	-	2.03	-
1997/98	1.50	3.64	1.69	1.62
1998/99	1.42	-2.18	1.65	-10.14
1999/00	1.39	-3.84	1.75	1.78
2000/01	1.42	0.08	1.80	4.52
2001/02	1.42	1.28	1.86	3.23
2002/03	1.50	2.70	2.32	14.02
2003/04	1.61	6.28	2.41	13.01
2004/05	1.61	3.49	2.03	-5.98
Change with base year		15.10		24.53

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

The table 9 shows increased wheat productivity in both conflict concentrated and less conflict concentrated districts during the study period. In the conflict concentrated districts it increased by an average of 15.10 percent despite a decrease in productivity by 2.18 and 3.84 percent in FY 1998/99 and 1999/00. The average wheat productivity increased by a high rate of 24.53 percent in less conflict concentrated districts despite a fall in productivity by 10 percent in the fiscal year 1998/99. The productivity of wheat decreased by 23.3 and increased by 4.8 percent as compared to national productivity in the conflict concentrated districts and less conflict concentrated districts respectively in the fiscal year 2004/05 (Appendix 1).

Time series data revealed that the trend of productivity of wheat in the conflict concentrated districts is not satisfactory as compared to less conflict concentrated districts.

In conflict concentrated districts, the productivity decreased due to poor qualified seeds, less fertilizer consumption and no plant protection measures followed. Farmers also suffered from the activities of Maoist and government forces such as looted standing crop. Farmers were leaving their land barren for a number of reasons including lack of adequate labor forces, lack of agricultural inputs (improved seeds and fertilizers) and Maoist taxation of the products. This might be reason of reducing area, production and productivity of wheat crop in conflict concentrated districts as compared to less conflict concentrated districts. Productivity of wheat in conflict concentrated districts and less conflict concentrated districts during ten-year periods are illustrated in figure 9.

Figure 9. Productivity (mt/ha) of wheat in conflict concentrated and less conflict concentrated districts during 1995/1996 -2004/05

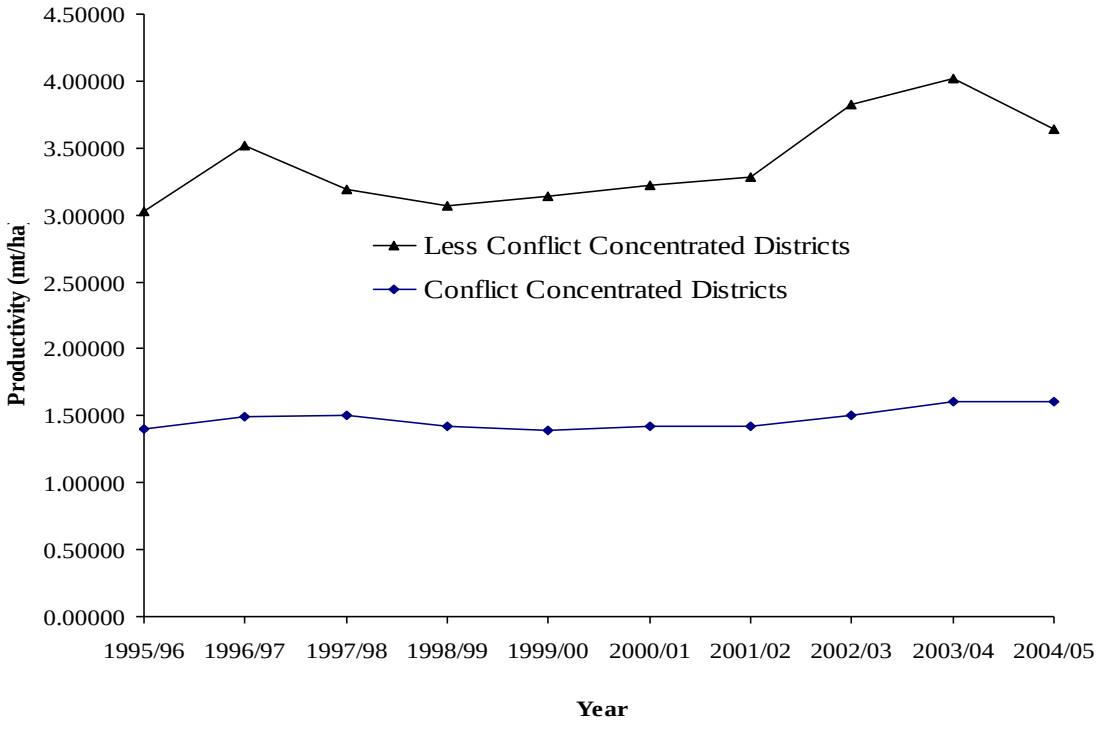


Figure 9 shows that the productivity of wheat in the less conflict concentrated districts is more and indicates an increasing trend as compared to the conflict concentrated

districts. The higher productivity could be not only because of less conflict but also availability of inputs, market access and more area under irrigation. The increment of productivity is slow in the conflict concentrated districts due to remoteness and associated with some socioeconomic problems.

CHAPTER 5

SUMMARY AND RECOMMENDATIONS

5.0 Summary

The major focus of the study was undertaken to assess the impact of the Maoist insurgency in the area coverage, production and productivity of major crops in both the groups of districts. Eight hill districts were purposively selected for the study and classified into conflict concentrates districts and conflict less concentrated districts. Rukum, Rolpa, Salyan, and Jajarkot were conflict concentrated districts from mid-western hill and Kaski, Tanahun, Lamjung and Kavre were less conflict concentrated districts from western and central hill. The analysis of the data is done on the basis of percentage change in annual basis with two years moving average as well as during past ten years. The comparison is made between conflicts concentrated, less conflict concentrated districts on the basis of changes occurring in past ten years, which shows an increase or a decrease trend.

Based on the findings of the study, the following conclusion was made;

5.0.1 Rice

The study revealed that the Maoist conflict has a negative impact on the area with rice crop in the conflict concentrated districts as compared to less conflict concentrated districts. Increase and decrease trend of rice cultivated area in the conflict concentrated districts was not observed consistent over the ten years period. The over all increment of rice cultivated area in conflict concentrated districts has been decreased by 6.35 percent where as the increment in less conflict concentrated districts increased by 19.85 percent as compared to base year. In conflict concentrated districts the area declined at a high rate of 3.26 percent in the fiscal year 1999/00.In less conflict concentrated districts rice cultivated

area seems continuously increasing during the study period except in the fiscal year 2002/03.

The production of rice decreased by 10.21 percent in the fiscal year 1997/98 in conflict concentrated district, which is highly significant. In less conflict concentrated districts the average rice production was observed the highest (165,955 mt) in the fiscal year 2001/02 where the average change was estimated 12.87 percent.

Average productivity of rice, in conflict concentrated districts rose by a marginal rate 4.48 percent as compared to high rate of 36.23 percent in less conflict concentrated districts. The productivity of rice has been decreased by 17 percent and increased by 6 percent in the conflict concentrated district and less conflict concentration district, respectively as compared to national productivity in the fiscal year of 2004/05.

5.0.2 Maize

The study indicated that the maize area in conflict concentrated districts increased positively from 1996/97 to 2000/01 over ten year's period. The percent change in area with base year was highest (11.97 percent), in less conflict concentrated districts where as the increment of area with the base year was 7.51 percent some increasing trend.

The average percent changes with base year in less conflict concentrated districts are obtained highest (68.49 percent) during ten year periods. It is three times more production (23.13 percent) than that of conflict concentrated districts.

The average productivity of maize crop in the conflict concentrated districts was not found consistent over the ten-year period. From 1996/97 to 1998/99, the average productivity trend of maize almost remained the same (from 1.59 to 1.65 t/ha). The percent changes with the base year in conflict concentrated districts is 14.46 percent where as in less conflict concentrated districts this is 50.64 percent. The productivity maize has

decreased by 11.5 and increased by 17.5 percent as compared to national productivity in conflict concentrated districts and less conflict concentrated districts, respectively in the fiscal year of 2004/05.

5.0.3 Wheat

The study shows that the average wheat cultivated area is higher in conflict concentrated districts than that of the less conflict concentrated districts, but not found at increasing trend. Only 3.32 percent area was changed with the base year in the conflict concentrated districts where 28.64 percent area was found in the less conflict concentrated districts.

As compared to the base year production, the production of wheat was increased by 19.09 and 60.45 percent in the fiscal year of 2004/05 in the conflict concentrated and less conflict concentrated districts, respectively.

The trend of productivity of wheat in the conflict concentrated districts was not satisfactory as compared to the less conflict concentrated districts. Only 15.10 percent productivity was changed with the base year in the conflict concentrated districts where 24.53 percent productivity was found in the less conflict concentrated districts.

5.1 Recommendations

From 1995/96 to 2004/05, the area, production and productivity data of major cereals such as rice, maize and wheat were analyzed in the conflict and less conflict concentrated districts. The area, production and productivity of these crops in the conflict concentrated districts were found at decreasing trend as compared to less conflict concentrated districts. Besides the existing Maoist conflict in these districts, unavailability of basic inputs such as fertilizers, seeds, technical know-how and credit were the main causes for reducing in the area, production and productivity of major cereals. The following recommendations are made based on the findings of this study:

i. The government should attempt to include the women, minor ethnic groups, dalits and janjaties in the mainstream of the economic development. The government should provide an employment opportunity to able-bodied men and women.

ii. To solve the Maoist conflict movement, both the responsible parties and rebels groups should start immediately dialogue and reconciliation processes. The government and rebel group should promptly announce permanent ceased fire and sit together on the dialogue process to reconstruct of Nepal.

iii. The government should immediately reduce the unnecessary expenditure on security and divert the resources to the development of agricultural sector. The government should implement developmental projects in the conflict concentrated districts as soon as possible to enhance the income and employment opportunities, so that necessary agricultural infrastructure environment can be established. Services can be delivered in the conflict concentrated areas.

iv. In order to make a strong national economy, the government should immediately reconstruct the infrastructure development such as rural agricultural road, financial institutions, micro credit, communication services, buildings, industries, and commerce and so on. The non-governmental organization (NGOs) and other associations should be activated in carrying out development package for enhancing productivity of cereals for food security and improve livelihoods in the conflict affected rural areas. The agricultural loans, subsidy on fertilizers, improved technology, other basic inputs should be provided for encouraging commercial and high value farming to increase the production and productivity of major cereals for reducing the poverty of conflict affected areas.

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APPENDICES

Appendix 1. National Area (ha), production (mt) and yield (kg/ha)

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	1496790	3578830	2391	791700	1331060	1681	653500	1012930	1550
1996/1997	1511230	3710650	2455	793720	1316840	1659	667120	1071970	1607
1997/1998	1506340	3640860	2417	799060	1367340	1711	640030	1030320	1610
1998/1999	1514210	3709770	2450	802290	1345910	1678	640802	1086470	1695
1999/2000	1550990	4030100	2598	819010	1445450	1765	660040	1183530	1793
2000/2001	1560044	4216465	2703	824525	1484112	1800	641030	1157865	1806
2001/2002	1516980	4164687	2745	825980	1510770	1829	667077	1258045	1886
2002/2003	1544660	4132500	2675	836190	1569140	1877	669014	1344192	2009
2003/2004	1559436	4455722	2857	834285	1590097	1906	664589	1387191	2087
2004/2005	1541729	4289827	2782	849892	1716042	2019	675807	1442442	2134

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Appendix 2. Area (ha), production (mt) and yield (kg/ha) of rice, maize and wheat in Rukum District during 1995/96-2004/05

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	4750	10450	2200	18540	31380	1693	11000	11880	1080
1996/1997	4750	10100	2126	18600	31500	1694	11000	15180	1380
1997/1998	4712	10230	2171	18650	31518	1690	11000	15540	1413
1998/1999	4750	10300	2168	18660	30789	1650	11100	15540	1400
1999/2000	3463	7694	2222	18650	31518	1690	11875	15627	1316
2000/2001	3579	8617	2408	18650	31520	1690	11875	17100	1440
2001/2002	3460	8026	2320	18130	30820	1700	11875	17100	1440
2002/2003	3570	8600	2409	18650	31520	1690	11875	17100	1440
2003/2004	3570	8600	2409	18650	31520	1690	11800	18215	1544
2004/2005	3570	8600	2409	18650	31520	1690	11000	18000	1636

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Appendix 3. Area (ha), production (mt) and yield (kg/ha) of rice, maize and wheat in Rolpa District during 1995/96-2004/05

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	4710	9890	2100	11190	17900	1600	8120	12000	1478
1996/1997	4710	9100	1932	11200	17900	1598	8120	12000	1478
1997/1998	4700	9160	1949	11190	17910	1601	8220	12330	1500
1998/1999	4710	9200	1953	11190	17920	1601	8200	12100	1476
1999/2000	4700	9160	1949	11190	17910	1601	8520	14050	1649
2000/2001	4700	9160	1949	11190	17910	1601	8520	14010	1644
2001/2002	4239	7500	1769	11190	17900	1600	8520	14010	1644
2002/2003	4700	9160	1949	11190	17910	1601	8520	14010	1644
2003/2004	4700	9160	1949	11190	17910	1601	8500	14000	1647
2004/2005	4700	9160	1949	11190	17910	1601	8620	14000	1624

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Appendix 4. Area (ha), production (mt) and yield (kg/ha) of rice, maize and wheat in Jajarkot District during 1995/96-2004/05

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	3590	7190	2003	7600	11780	1550	6100	8460	1387
1996/1997	3500	6370	1820	7630	11820	1549	6540	9440	1443
1997/1998	3500	5730	1637	7830	12528	1600	6540	9440	1443
1998/1999	3510	6370	1815	7800	12010	1540	6550	8024	1225
1999/2000	3502	6886	1966	8830	15894	1800	7850	6671	850
2000/2001	3508	7915	2256	8830	16517	1871	7850	6671	850
2001/2002	3502	6886	1966	8835	14791	1674	7850	6671	850
2002/2003	3500	7900	2257	8830	16510	1870	7850	9812	1250
2003/2004	3500	7900	2257	8830	16510	1870	5900	9810	1250
2004/2005	3500	7900	2257	8830	16510	1870	7850	10472	1334

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Appendix 5. Area (ha), production (mt) and yield (kg/ha) of rice, maize and wheat in Salyan District during 1995/96-2004/05

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	6950	17220	2478	18700	28050	1500	12570	20400	1623
1996/1997	6040	11260	1864	19000	28500	1500	13074	20910	1599
1997/1998	6047	11300	1869	19135	28894	1510	13100	21000	1603
1998/1999	6050	11350	1876	19135	28700	1500	13175	19763	1500
1999/2000	6057	12350	2039	21538	38912	1807	13574	21710	1599
2000/2001	6059	12972	2141	21555	38790	1800	13574	21710	1599
2001/2002	6060	12368	2041	21568	39900	1850	13574	21780	1605
2002/2003	6750	13460	1994	21560	38040	1764	13574	21780	1605
2003/2004	6750	13460	1994	21560	38040	1764	13000	21000	1615
2004/2005	6959	18024	2590	21570	43787	2030	11578	20314	1755

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Appendix 6. Area (ha), production (mt) and yield (kg/ha) of rice, maize and wheat in Kaski District during 1995/96-2004/05

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	15300	35100	2294	15400	25450	1653	4530	8400	1854
1996/1997	15350	36800	2397	15450	23150	1498	2030	8450	1680
1997/1998	15350	35100	2287	15400	25410	1650	5200	8892	1720
1998/1999	15450	37164	2405	15500	24800	1600	5563	9635	1732
1999/2000	16533	39845	2410	15694	30502	1944	5563	9635	1715
2000/2001	18089	39649	2192	15805	32400	2050	6415	11000	1715
2001/2002	18533	51855	2798	15805	28450	1800	6415	11000	2331
2002/2003	18590	51680	2780	16000	31680	1980	6500	15150	2331
2003/2004	18600	51894	2790	16000	32160	2010	6500	15150	2331
2004/2005	18609	51890	2788	16035	32682	2038	9091	18313	2014

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Appendix 7. Area (ha), production (mt) and yield (kg/ha) of rice, maize and wheat in Tanahun District during 1995/96-2004/05

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	14100	30480	2162	19700	33490	1700	2850	5290	1856
1996/1997	14320	32940	2300	20000	32000	1600	2850	4703	1650
1997/1998	14350	33722	2350	20120	34480	1714	2850	4703	1650
1998/1999	14400	33722	2342	20120	34200	1700	2700	4833	1790
1999/2000	14500	35685	2461	21760	41541	1909	2700	4524	1676
2000/2001	16604	46607	2807	21765	47637	2189	2650	4839	1826
2001/2002	16840	51918	3083	22000	52316	2378	2560	5248	2050
2002/2003	16850	45420	2696	21770	42435	1949	2495	5526	2215
2003/2004	16850	45420	2696	21960	46466	2116	2495	5520	2212
2004/2005	16713	51495	3081	21960	57096	2600	2300	4870	2117

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Appendix 8. Area (ha), production (mt) and yield (kg/ha) of rice, maize and wheat in Kavre District during 1995/96-2004/05

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	12150	28220	2323	23330	33370	1430	11350	16950	1493
1996/1997	12200	30500	2500	23560	36710	1558	11500	17250	1500
1997/1998	13825	34222	2475	23965	40390	1685	12000	20400	1700
1998/1999	13900	36395	2618	24000	48000	2000	11350	18728	1650
1999/2000	14850	39720	2675	25550	57100	2235	11550	20960	1815
2000/2001	14850	39768	2678	25550	51100	2000	11550	21750	1883
2001/2002	15150	46750	3086	255000	50900	1996	11550	21750	1883
2002/2003	15200	46800	3079	25500	58320	2287	11500	28000	2435
2003/2004	15000	46900	3127	25000	59000	2360	11500	30000	2609
2004/2005	11875	38340	3229	23200	53400	2302	12950	26000	2008

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.

Appendix 9. Area (ha), production (mt) and yield (kg/ha) of rice, maize and wheat in Lamjung District during 1995/96-2004/05

Year	Rice			Maize			Wheat		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1995/1996	11200	21500	1920	10450	15360	1470	3300	5280	1600
1996/1997	11760	23440	1993	11240	16520	1470	3630	6122	1687
1997/1998	11800	23600	2000	11300	18284	1618	3770	6250	1658
1998/1999	11900	23996	2016	11350	17150	1511	4315	7050	1634
1999/2000	11908	24936	2094	11830	20209	1708	7310	1700	200
2000/2001	12100	27866	2303	11835	20238	1710	4300	8343	1940
2001/2002	12791	27496	2149	11930	24015	2013	4345	8250	1899
2002/2003	12100	27800	2298	11840	20240	1709	4085	8500	2081
2003/2004	12100	27800	2298	11840	20240	1709	4085	8500	2081
2004/2005	16025	46473	2900	15935	38244	2400	4000	8451	2113

Source: Statistical Information on Nepalese Agriculture, Agri-Business Promotion and Statistic Division, MOAC, 1995/96-2004/05.