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Development and Conflict:
The Economic Impacts of Civil War in Swat: Pakistan

A thesis
submitted in fulfilment
of the requirements for the degree
of
Doctor of Philosophy in (Economics)
at
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by
Haseeb Ahmed Bhatti



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Abstract

Violent conflicts have economic causes and economic consequences. In addition to the lost lives, injuries and the overall scale of human suffering that conflicts create, they also destroy assets and institutions. The consequences, the intensities of conflicts and their linkages with human endeavours to protect people from critical threats are not only a major national, but also an international developmental challenge. The terrorist attacks in the United States in 2001 drastically changed the paradigm and the epicentres of conflicts to something much different from the 20th century. In the changed paradigm, terrorist planning and attacks are largely considered to be originating from Muslim countries, masterminded by internationally linked organisations like Al Qaeda. These organisations are considered to be the source and Western countries to be revenge targets, particularly the United States because of its foreign policy repercussions in Muslim countries. Considering this fact, this thesis examines global conflicts and their links with income, economic development and democracy from 2000-2009, the period which fundamentally transformed the nature of global conflicts. This study is expected to be the first attempt to cover the period and to have a specific focus on Muslim majority countries, using similar econometric techniques and variables to those applied to broad global analyses.

This study then moves from global analysis to focus on the micro household effects of the recent violent civil conflict in Swat, Pakistan. A visible gap in economics-based conflict-orientated research was identified, with no apparent studies of post-conflict livelihoods in Swat. This thesis seeks to fill the void, and investigates losses of key household assets and their impact on determining post-conflict livelihood choices in Swat. Using survey data from 275 randomly sampled households in five out of the seven affected tehsils of Swat district, several statistical and modelling techniques are used to assess how and to what extent the conflict, which became civil war, has affected household livelihoods in Swat. Specifically the following relationships were considered and examined: (i)

assets and income portfolios of households, and the quantitative extent of damages to conflict-affected household assets; (ii) asset endowment and its impact in prioritising post-conflict livelihood strategies; and (iii) possible alternative livelihood opportunities resulting from positive post-conflict interventions in the regional economy, which effectively results in livelihood revival.

It was found that households lost human, physical, natural, social, and financial assets, and the post-conflict environment constrained their income and employment opportunities. Their expenditures increased and as a coping strategy, many sold their assets. The limited and damaged asset endowments (physical, financial and natural) were identified as major constraints to pursuing known livelihood choices or adopting more rewarding ones, in the shattered infrastructural and physical economic environment of Swat. Finally, in finding appropriate revival options, and by using simulation modelling, this thesis suggests an integrated development framework to enhance the regional economy and household livelihoods. This revival of pre-war thriving sectors is expected to decrease economic incentives to join militant groups such as the Taliban.

Keywords: *CONFLICT ECONOMICS, CIVIL WAR, SWAT AND THE TALIBAN, POST-CONFLICT SUSTAINABLE LIVELIHOODS*

Notes

Reviewed conference papers have been produced from this thesis as follows:

- “Livelihoods and post war legacies in Swat: Pakistan”.
17th Annual Waikato Management School Student Research Conference, University of Waikato, New Zealand, October 2013 (with Steven Lim and Dan Marsh).

- “Development and freedoms: Does their denial cause violent conflicts?” 16th Annual Waikato Management School Student Research Conference, University of Waikato, New Zealand, October 2012 (with Steven Lim).

Dedication

This thesis is dedicated to my mother and my father, Abdul Hameed Bhatti (may his soul rest in peace), who taught me to move ahead, and to struggle for that which looks impossible.

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Writing these lines comes after a long struggle to complete this thesis. The following people helped me with every step towards completion and are a part of it because of everything they contributed in support, assistance, company, suggestions and corrections.

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Table of Contents

Abstract	ii
Notes	iv
Dedication	v
Acknowledgements	v
Table of Contents	viii
List of Tables	xiii
List of Illustrations	xv
Abbreviations and Acronyms	xvii
Chapter One	1
Introduction.....	1
1.1 Conflicts and their Repercussions.....	1
1.2 Conflict in Swat: Pakistan.....	3
1.3 Research Aim and Research Questions	4
Research Questions	4
1.4 Conceptual Framework	6
1.4.1 Sustainable Livelihood Framework	6
1.4.2 Dynamic Modelling Framework	10
1.4.3 Conceptualization of Post-Conflict System	11
1.5 Post-Conflict Linkages of Capitals and Sustainable Livelihoods.....	12
1.5.1 Interaction of Assets and Livelihoods.....	14
1.6 Significance of Research/Contribution to Knowledge.....	15
1.7 Thesis Arrangement	17
Chapter Two.....	19
Economic Development and Freedom: Is Their Denial Linked to Violent Conflicts?	19
2.1 Introduction.....	19

2.2	The Literature Review	21
2.2.1	Dialectics of Growth and Governance	21
2.2.2	Deprivation and Inequalities	24
2.2.3	Terrorism: Conflicts and Civil Wars.....	26
2.2.4	The Literature Focusing on Muslim Countries	28
2.3	Definitions and Data	30
2.3.1	Model Specifications	36
2.4	Results and Discussion	37
2.4.1	Countries with Severe Conflicts and Wars.....	40
2.4.2	Results from the Muslim Subset: All Levels of Conflicts	43
2.4.3	Muslim Sub-set with Severe Crisis and Wars.....	44
2.5	Conclusions.....	48
	Chapter Three.....	51
	Extremism and Emergence of the Taliban in Pakistan	51
3.1	Introduction.....	51
3.2	Key Facts about Pakistan	52
3.2.1	Military Interventions and Dictatorships	54
3.2.2	The Proxy Afghan War	57
3.3	Emergence of the Taliban	59
3.4	Geography, Economic and Governance Structure:.....	61
	Militant Dominated Areas.....	61
3.4.1	Political and Economic Facts about FATA	62
3.5	Swat Valley and the Taliban	64
3.5.1	Background of the Taliban Occupation	65
3.6	The Taliban’s Rule in Swat.....	67
3.7	Post-War Swat	69
3.8	Conclusions.....	70

Chapter Four	72
Survey Design and Field Research Instruments	72
4.1 Introduction.....	72
4.2 The Field Survey Approach	73
4.2.1 Income and Expenditure Survey-Based Research in Pakistan.....	75
4.3 Questionnaire Design.....	76
4.3.1 Questionnaire Content	78
4.3.2 Questions and their Linkages.....	80
4.4 Selection of Study Areas in Swat.....	80
4.5 Units of Study and Sampling Frame	82
4.5.1 Sampling Frame	84
4.6 Training of Enumerators and Pilot Study	86
4.7 Data Management and the Quality Control	88
4.8 Conclusions.....	89
Chapter Five.....	90
Description of Households and Assets in Swat	90
5.1 Introduction.....	90
5.2 Household Demographics and Human Capital.....	91
5.2.1 Reasons for Not Being Employed.....	94
5.2.2 Exclusion and Valuation of Human Capital	95
5.3 Social Capital	99
5.4 Natural Capital	103
5.5 Physical Capital	105
5.6 Financial Capital	109
5.6.1 Remittances.....	109
5.6.2 Credit.....	110
5.6.3 Savings.....	111

5.7	Income and Employment Structure	113
5.7.1	Consumption	115
5.8	Education and Health Expenditure	116
5.9	Conclusions.....	117
	Chapter Six.....	121
	Livelihoods and Post-War Legacies in Swat	121
6.1	Introduction.....	121
6.2	Micro Analysis of Violent Conflicts.....	122
6.3	The Livelihood Strategy Concept	126
6.4	Identification of Livelihood Strategies	128
6.4.1	Livelihood Strategies in Swat	129
6.5	Identification of Livelihood Strategies with Cluster Analysis.....	133
6.5.1	Other Significant Differences between the Livelihood Clusters ...	135
6.6	Empirical Analysis.....	136
6.6.1	Model Specifications	137
6.7	Empirical Interpretation	143
6.8	Conclusions.....	150
	Chapter Seven	154
	The Inter-Sectoral Model for Household Assets and Opportunities in Post-War Swat	154
7.1	Introduction.....	154
7.2	Devastation of Agriculture and Tourism	156
7.3	Post-Conflict Livelihood Revival	159
7.4	The Modelling Framework	161
7.5	Simulation Modelling and Livelihood Analysis	165
7.5.1	Modelling Parameters	165
7.5.2	Model Assumptions	167

7.6 Results and Discussion: Why Recruit?	173
7.6.1 Why Recruit?	177
7.6.2 Individual Infrastructural Services Shocks	181
7.6.3 Scenario 3 - Combined Infrastructural Shocks	182
7.7 Conclusions.....	186
Chapter Eight	190
Conclusions.....	190
8.1 Key Findings and Policy Implications	190
8.2 Future Research Needs.....	193
8.3 A Final Comment.....	194
References.....	195
Appendices.....	213

List of Tables

Table 2.1:	Data Description and Descriptive Statistics.....	33
Table 2.2:	Probit Analysis for Onset of Conflicts – 2000 -2009.....	40
Table 2.3:	Probit Analysis for Onset of Conflicts – 2000 -2009	41
Table 2.4:	Probit Analysis for Onset of Conflicts – 2000 -2009	45
Table 2.5:	Probit Analysis for Onset of Conflicts – 2000 -2009.....	46
Table 3.1:	Significant Economic and Development Indicators of Pakistan.....	52
Table 4.1	Research Locations in Swat	82
Table 5.1:	Household Demographics-Age, Household size, Education and Gender in Swat.....	90
Table 5.2:	Valuation of Human Capital.....	97
Table 5.3:	Social Capital: Horizontal Linkages in Swat.....	100
Table 5.4:	Household Perception of Various Past and Present Inequalities.....	100
Table 5.5:	Natural Capital, Resources and Post-Conflict Effects	102
Table 5.6:	Asset Description of Households in Swat.....	105
Table 5.7:	Household Assets and Access to Public Utilities in Swat	106
Table 5.8:	Source and Annual Money Transfers in Swat	108
Table 5.9:	Sources, Purpose, and Disadvantages of Loan	110
Table 5.10:	Annual Household Income from Main Employment Categories in Swat	112
Table 5.11:	Consumption Expenditure of Households in Swat	113
Table 5.12:	Annual Educational and Health Expenditure of Households in Post-Conflict Swat.....	115
Table 6.1:	Number of Household Income Earning Activities in Swat.....	128
Table 6.2:	Household Employment Classification in Major Categories in Swat	129
Table 6.3:	Livelihood Strategies and Annual Income from Major Strategy Choice in Swat	131

Table 6.4:	Livelihood Clusters and Average Income Share from the major Source.....	133
Table 6.5	Definition and Measurement of Model Variables	138
Table 6.6:	Summary of Household Characteristics by Livelihood Strategy Choice in Swat	139
Table 6.7:	Multinomial Logit Model Results of Livelihood Strategies in Swat	143

List of Illustrations

Figure 1.1:	Sustainable Livelihood Framework	6
Figure 2.1:	Global Conflicts of Low, Medium and High Intensity 1945-2009	31
Figure 2.2:	Political Systems Worldwide - 1945-2009	31
Figure 3.1	One Page from Jihadi Book	58
Figure 3.2:	Pakistan-Afghanistan Border and the Frontier Tribal Areas.	60
Figure 3.3:	Map of Conflict Regions in Pakistan	63
Figure 3.4:	Swat District of Pakistan	65
Figure 4.1:	Household Survey Data from Swat: Links and Significance	72
Figure 4.2:	Map of Swat District	81
Figure 5.1	Reasons for not Joining Job Market in Swat	93
Figure 5.2	Are there educational opportunities like schools for girls available in your area?	94
Figure 5.2.1	Do you believe that girls must get a school education?	95
Figure 5.2.2	Alongside religious education, should girls get formal education in schools?	95
Figure 5.3	Household Association with Formal Groups and Networks in Post-Conflict Swat	99
Figure 5.4	Benefits of Formal Group Memberships in Swat	99
Figure 5.5	Change in Household Assets and Quality of Public Services in Post-Conflict Swat	106
Figure 5.6:	Savings Behaviour of Households in Swat	111
Figure 5.7:	Employment Patterns of Household Members in Swat	112
Figure 5.8:	Post-Conflict Income Coping Strategies of Households in Swat	113
Figure 7.1:	Inter-Sectoral Labour Allocations in Swat	162
Figure 7.2:	Annual Agri Output per Worker (Baseline Scenarios)	172
Figure 7.3:	Tourism Businesses	172
Figure 7.4:	Monthly Agri Profits per Worker	173
Figure 7.5	Net Expected Tourism Wage	173
Figure 7.6	Business Employment	174

Figure 7.7	Agricultural Employment	174
Figure 7.8	Annual Agri Output per Worker (Scenarios 3)	181
Figure 7.9	Tourism Businesses	182
Figure 7.10	Monthly Agri Profits per Worker	182
Figure 7.11	Net Expected Tourism Wage	183
Figure 7.12	Agricultural Employment	183
Figure 7.13	Business Employment	184

Abbreviations and Acronyms

ADB:	Asian Development Bank
CPI:	Corruption Perception Index
DFID:	Department for International Development
EPS:	Environment Protection Society
GDP:	Gross domestic product
HDI:	Human Development Index
HDR:	Human Development Report
HIES:	Household Integrated Economic Survey
HIK:	Heidelberg Institute for International Conflict Research
KP:	Khyber Pakhtunkhwa
LSMS:	Living Standard Measurement Survey
MLM	Multinomial Logit Model
NWFP:	North Western Frontier Province
PATA:	Provincially Administered Tribal Areas
PKR:	Pakistani Currency, Rupees
PRI:	Political Rights Index
PTS:	Political Terror Scale
SDM:	System Dynamic Modelling
SL:	Sustainable Livelihood
SLE:	School life expectancy
SLF:	Sustainable Livelihood Framework
TNSM:	Tehrik-e-Nifaz-e-Sharia Muhammadi
TTP:	Tehrik-e-Taliban Pakistan
WDR:	World Development Report
WWII:	World War Second

Chapter One

Introduction

1.1 Conflicts and their Repercussions

More than 40 years ago, Ted Gurr, a distinguished social scientist, titled his book “Why Men Rebel” (Gurr, 1970). More recently, the renowned economist Alan Krueger asked “What makes a terrorist?” (Krueger, 2007). These queries stand as salient research questions in economics and other social sciences. Collective violent and destructive actions have economic and social¹ causes, as well as economic consequences. This has led to an emerging, important strand in the economics literature - the economics of conflict and terrorism. Post-World War II history has witnessed a shift in the dynamics of violent conflicts. Instead of traditional interstate wars or conflicts between rival nations, a tremendous increase has occurred in intrastate conflicts, thus changing the mould of 20th century wars (Human Security Report, 2009-2010). By the mid-1970s civil wars against colonial powers to gain independence had shown an inexorable increase. Later, other civil wars, including the geopolitics of the Cold War, replaced wars for liberation, and the outbreak of conflicts and their intensity barely diminished. The end of the Cold War in early 1990’s removed a major source of interstate conflicts from the international arena. There was a paradigm shift in governance structures and the world witnessed the majority of countries adopting democracy as their governance system. Conflicts decreased for a few years, but from the early 2000 there has been a steep rise in violent conflicts globally. This increase has its roots in Islamist political violence² and the so-called war on terror (Human Security Report, 2009-2010)

The terrorist attacks of September 11, 2001, in the United States drastically changed the dimensions and epicentres of conflicts. Cross-border terrorist planning and attacks were largely considered to be originating in Muslim countries, masterminded by internationally linked organisations like Al Qaeda. Muslim countries are widely believed to be a source of revenge terrorist acts

¹ Relevant social issues are discussed where appropriate in Chapters 2, 3, 5 and 7

² Over 25 percent (9 out of 34) conflicts started or re-started in mid of the decade are associated with such violence, and international and local efforts to crush such violence

across the globe, mostly stemming from their internal economic and political concerns, for which they put the onus of responsibility on developed countries, particularly the USA³ (Espisto, 2002; Mamdani, 2002). The Conflict Barometer (2010) report observes 109 violent conflicts globally in 2010 alone. Sub-Saharan Africa, Asia and the Middle East are the central arenas for the most violent intrastate conflicts.

More than 1.5 billion people live in areas affected by fragility, violence, and conflicts. The World Development Report (WDR) (2011) indicates that no low-income, conflict-affected country has achieved the United Nations Millennium Development Goals (UNMDG). New data on poverty reveal a decline in poverty overall, but conflict-affected countries are lagging behind in poverty reduction efforts at substantial levels (WDR, 2011). The direct and spillover economic costs of more than US \$300 billion resulting from these conflicts are three times more than the annual available global development aid of about US \$100 billion to developing countries. Apart from the lost lives, injuries and the overall scale of human suffering which conflicts create, they also destroy assets and institutions. Recovering and rebuilding takes many years, and the irony is that efforts do not always succeed (World Bank, 2009). The consequences and intensities of conflicts and their linkages with human endeavours to protect people from critical threats are not only a major national, but also an international developmental challenge. Humphreys (2003) elaborates the belief of researchers that we cannot understand the economic development process without understanding violent conflicts: addressing these linkages requires us to change the way we think about human well-being. Such efforts have established the concept of 'human security', which redefines the way we look at human well-being. Human security looks beyond a violence-free society; it encompasses caring governance, human rights, access to economic opportunities and development of human capabilities (United Nations Trust Fund for Human Security) (UNTFHS), (2010). Insecurity not only still exists; it has become a primary developmental challenge of our time (WDR, 2011).

³ This war is largely considered as war against Islam

Violent conflicts are distinguished from other (economic) shocks by their inherently destructive nature. Conflict, once initiated, typically acts as a catalyst to perpetuate the poverty, hunger and underdeveloped status of already deprived people. Killings, injuries and displacement aggravate joblessness, vulnerability and the precariousness of household livelihoods (Justino, 2006). The breakdown of infrastructure, social services and ties, loss of agricultural land and assets, limited access to and inflated prices of essential commodities are associated with violent conflicts, which seriously affect survival strategies and disrupt livelihoods and people's goals⁴.

1.2 Conflict in Swat: Pakistan

Among the five presently most conflict-ridden countries⁵, which are, Iraq (militant groups), Nigeria (Boko Haram), Syria (militant groups: ISIL) Afghanistan (the Taliban) and Pakistan (the Taliban and other Islamic militants), the latter two are neighbours in South Asia. That makes this underdeveloped region volatile, violent, and extremely antagonistic to economic developmental challenges. In Pakistan, the violent civil conflict intensified when the Taliban succeeded in forceful occupation of Swat district, which lies 270 kilometres north of the capital Islamabad, in early 2009. Their occupation and its outcomes created huge repercussions for the regional economy, and on households and their livelihoods. Swat was a renowned tourist resort: the Taliban invasion and later a large-scale civil war, involving the Taliban and Pakistani security forces, turned the region into devastated and destructive area. Assets were destroyed, infrastructure was severely damaged, and households had to move for safety and survival. Suicide bombings, targeted attacks as offshoots of the conflict in Swat, made not only the region but the country overall extremely insecure. Growth and development were seriously affected: the government had to diversify resources, and drastically change internal priorities.

The above discussion described some repercussions of global conflicts and of the particular conflict in Swat. The conflict in Swat involving the Taliban had an

⁴ Chapters 2 and 6 discuss such repercussions in more detail

⁵ A publication by Institute for Economics and Peace, Global Terrorism Index – 2014 reports that more than 80 percent lives lost to terrorism occurred in these five countries in 2013.

Islamic militant identity and the objective was to enforce *Sharia* (an Islamic governance system), which re-shaped and altered the balances of power and transformed economic and social spheres in the region by changing a functioning state system and creating a mini-state. Violent intrastate conflicts remain a major developmental challenge to understand and address, particularly region-specific conflicts that affect the future prosperity of nations.

This thesis looks at the economic underpinnings of the circular relationship between an initial conflict-related shock, loss of income, loss of economic opportunities, and further conflict. It begins from a global perspective, probing links between conflict and economic development, and ultimately narrows the focus to a particular regional conflict; a former hotbed of violent activity which became a state civil war and terrorist recruitment - the Swat valley in Pakistan.

1.3 Research Aim and Research Questions

The Key Research Aim of this thesis is an investigation of the economic relationship between income poverty, sustainable livelihood opportunities, and violent conflict.

Research Questions

This thesis studies the poverty-conflict relationship from two distinct perspectives. The first is a global analysis, after which it focuses on a specific arena of violent conflict, terrorist activity and recruitment in the Swat district of Pakistan. Accordingly, four main research questions are addressed:

1. Using global data, is there a relationship between conflict and key economic variables such as per capita income, economic development indicators (including education), and democratic freedom? Can further econometric testing establish such a relationship in a subset of Islamic countries?
2. Given the results from econometric testing of different sets of countries, my research then moves to focus on household livelihoods in specific post-conflict settings. The next research question becomes: what are the

various forms of household assets (human, social, physical, financial, and natural), income, and expenditure patterns of recently affected post-conflict households, using Swat (Pakistan), as the region of study?

3. How do different household assets affect households' decisions to choose different livelihood portfolios in post-conflict Swat?

4. How do households' livelihood assets interact to determine livelihood opportunities, which may emerge from positive shocks applied to the regional economy of Swat? Can increased livelihood policies and opportunities decrease the economic incentives for further recruitment into militant organizations such as the Taliban?

The research questions are framed to investigate the links between conflict and income and sustainable livelihoods in post-conflict environments and will help in finding livelihood revival possibilities within the framework of the key research aim. The motivation for my research topic originates from my own experiences. I have lived in Pakistan since birth. In recent history I have not seen bigger economic development and social challenges than the current civil armed conflict in my country, affecting its more than 180 million people. It has not only hindered peace and growth, but has jeopardised future security and developmental prospects. I have witnessed a number of negative outcomes, not only economic but also social and psychological transformations resulting from the still ongoing conflict in the country. The suicide bomb attacks and news of killings every day bring fear and insecurity to every household. These attacks not only disrupt economic activities but threaten human security in Pakistan. One of my cousins, Dr. Israr Shah, a former candidate for the national assembly, was critically injured in a bomb blast at a political rally in Islamabad. He lost both of his legs: his wife (a doctor by profession) and children are unable to live normally even more than six years after that incident. The conflict has significantly altered the livelihood context, assets, strategies, and outcomes not only in the affected areas but for many households in the country. Studying the economic impacts of conflict on households and highlighting the relevant revival options is of utmost importance

for the present and future development goals and prospects of both the regional and national economy.

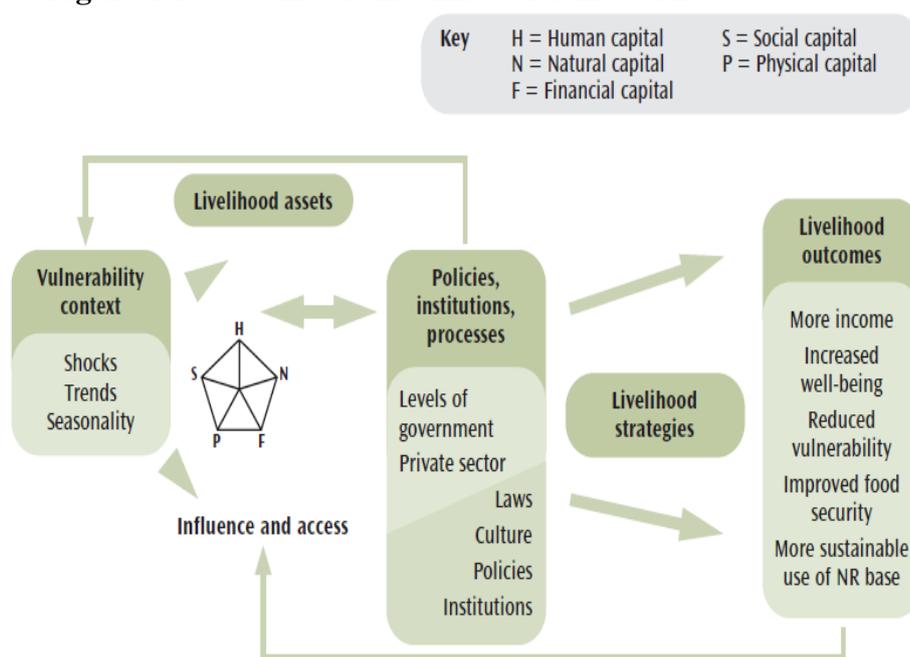
1.4 Conceptual Framework

1.4.1 Sustainable Livelihood Framework

The recent violent conflict in Swat has had multiple impacts on rural and urban households, livelihood choices, assets and outcomes for households and various institutions. It was insufficient and unconvincing to merely study the impact of conflict on employment and income opportunities. To address this, a comprehensive approach comprising a Sustainable Livelihood Framework (SLF) was adopted to explore the livelihoods of conflict-affected households in Swat district.

This framework was proposed by DFID (1999; 2000; 2001) and is summarized in Figure 1.1. This people-centred approach analyses livelihoods, and how these change over time. It is holistic and attempts to identify the most pressing constraints faced by and the most promising opportunities open for the people. Another characteristic of this approach is its dynamism, as it effectively recognizes the effects of external shocks on livelihoods. Chambers and Conway (1991) argue that a term like *Capability* as used by Amartya Sen (Sen, 1984) is the ability of a person to perform functions that he/she is capable of doing. *Equity* relates to a relatively equal distribution of assets, capabilities and opportunities and *Sustainability* is the capacity for self-sufficiency and long term self-reliance in pursuing livelihood outcomes: all three combine in the concept of Sustainable Livelihood and are linked.

Figure 1.1: Sustainable Livelihood Framework



Source: DFID (1999–2005), *Sustainable Livelihoods Guidance Sheet 2.1*.

The definitions and key concepts of this framework are explained next:

Sustainable Livelihood

Chambers and Conway (1991, p. 6) define livelihood as follows: “A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living”. They also indicate within the definition that “A livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation”. Chambers and Conway (1991) describe the core of livelihood as a ‘living’ and in the anatomy of household livelihood the most significant aspects are tangible and intangible assets. Based on these assets people construct a living, during which they use their physical labour, skills, knowledge and creativity.

Vulnerability Context

Vulnerability context in the SLF framework frames the environment in which people exist: and has two aspects. One is external and consists of the stresses and shocks which people have to face. The internal context of vulnerability is the

ability to cope and manage. Stresses are the pressures which are typically continuous and often predictable like seasonal shortages, rising population and declining resources, while shocks are unpredictable, traumatic and sudden, such as fires, floods, earthquake, diseases and civil violence (Chambers & Conway, 1991). The various assets of households determine their vulnerability context and enable them to cope with stress and shocks with reduced risk of disturbance to their future livelihoods.

Livelihood Assets

Scoones (1998) suggests that livelihood strategies are dependent upon the basic material and social, tangible or intangible assets, which people possess. DFID's framework identifies five core assets or capitals on which livelihoods are built. The asset pentagon in Figure 1.1 is a visual representation showing the inter-relationships among the five core assets, which are described as human, physical, financial and social capitals. These assets are defined briefly below, and more detailed description of the core livelihood assets is included in Chapter Five.

Human capital: According to DFID, "Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives" (DFID, 1999, p. 7). At a household level, human capital is a factor of the amount and quality of labour available; this varies according to factors including household size, skill levels, leadership potential and health status.

Social capital is defined as the "social resources upon which people depend in pursuit of their livelihood objectives" (DFID, 1999, p. 9). This capital includes the networks, social claims, social relations, affiliations, and associations upon which people draw to seek various livelihood strategies (Scoones, 1998).

Natural capital refers to the natural resource stock from which useful resources for livelihood are derived and utilized. Natural capital includes assets that are used directly for production and economic benefits such as land, trees, water and soil quality (DFID, 1999; Scoones 1998). Obviously, natural capital is of great importance to those whose livelihood strategies depend partially or totally on

natural resources such as farming, forestry, fishing, mineral extraction, and ecological tourism.

Physical capital includes the basic infrastructure and producer goods needed to support livelihoods. Infrastructure consists of those changes which make people more productive and producer goods are the tools and equipment which help in increasing productivity. The essential infrastructures are commonly public goods, which help in sustainable livelihoods, including affordable transport, secure shelter and buildings, sufficient water supply and sanitary conditions, clean and affordable energy and easy access to information and communication (DFID, 1999).

Financial capital consists of the financial resources that people use to achieve their livelihood objectives. Financial capital consists of two main sources: available stocks and regular inflows of money. Savings are the preferred form for the first source, in the form of cash and bank deposits or other liquid assets such as jewellery and livestock, whereas the second source excludes regularly earned income. It consists of money received from pensions, transfer from the state and remittances.

Transforming structures and processes

Within the livelihoods framework, transforming structures and processes consist of institutions, various organizations, policies and legislation that shape and affect livelihoods (DFID, 1999). They have effects at all levels: international, national, regional, community and individual households. At the household level they effectively determine access to different capitals, livelihood choices, the terms of exchange of different livelihood capitals, and economic or other returns to livelihood strategies.

Livelihood strategies

Livelihood strategies can be defined as the range and combination of activities and choices that people pursue in order to achieve their livelihood objectives, such as activities concerned with production, investment and others (DFID, 1999). Livelihood strategies can be identified at different levels ranging from individual,

household and village levels to regional and national level (Scoones, 1998). A household livelihood strategy as Ellis (2000) defines it is a combination of activities that create the means of household survival.

Livelihood outcomes

Livelihood outcomes are accomplishment or outputs of livelihood strategies: these goals vary between people and the richness of these goals and the priorities of different people are as significant as the major constraints in their achievements. Increased income relates to economic sustainability but people also value non-material goods like self-esteem and the physical well-being of household members, health status, and the maintenance of their heritage. These outcomes indicate the level of well-being (DFID, 1999). For poor people, reducing their vulnerability and increasing overall sustainability may be most significant. Improving food security is an important objective because hunger and inadequate diet are distinct dimensions of deprivation. This research will focus on livelihood outcomes (economic and physical well-being) in a possible revival of post-conflict household livelihoods in Swat.

1.4.2 Dynamic Modelling Framework

To analyse the linkages of the capitals (human, physical, social, financial and natural) and their interactions to determine the labour allocations based on profits/wages among different sectors in post-conflict Swat, a System Dynamic model is used in Chapter Seven. System dynamics (SD) methodology has grown rapidly in recent decades for modelling dynamic phenomena. It is consistent with traditional economic modelling approaches but uses different conventions and terminology (Smith & Ackere, 2002).

The study of livelihoods requires the collection of wide-ranging information, which is likely to show that complex interactions are taking place at different levels. The interactions in capitals may determine opportunities and strategies, like changing preferences for labour sectors. System Dynamic Modelling (SDM) facilitates the analysis of such complex interactions and provides sound reflections whose focus is not only on system structures but also on different linkages, which generate predictive evaluations of alternative behaviours. SDM is

a widely applicable system-based problem-solving approach that increases understanding of how certain behaviour links with internal structure and external factors (Kassa & Gibbon, 2002).⁶ Software such as Vensim facilitates this complex examination of livelihood systems. System dynamics has emerged as a powerful methodology for social system analysis as it has the ability to address short and long-term issues in real systems, and can model complex nonlinear relationships (Sanjaykumar, 2008).

1.4.3 Conceptualization of Post-Conflict System

A conflict area is considered as a system involving human actions, behaviour, activities and household livelihoods: it consists of many subsystems. These include the human, physical, social, financial, and natural assets or capitals, which people possess or aim to possess. All these subsystems are interdependent and interlinked and function as a dynamic unit. An external shock like conflict changes the functioning of the subsystems, disturbing the livelihood opportunities and strategies not only of the whole system but also of the subsystems involved in it. The complex issues in post-conflict environment like damaged livelihood opportunities and preferences for labour allocation can be addressed properly by policies and alternative opportunities. Simulations are used to understand the influence of such policies on the overall functioning of the system (in Swat district) and to arrive at optimal solutions and practical guidelines for sustainable livelihood development.

During the field study, particularly to observe the effects of damaged assets and their linkages to post-conflict livelihoods, a variety of case studies were done. The information from the case studies was useful in observing the effects of asset losses on household livelihood and on their pursuit of post-conflict livelihood revival. These insights informed the development and analysis of the simulation modelling in Chapter Seven. Two selected case studies are presented next.

⁶ See more examples of SD modeling focusing on sustainable livelihoods in Chapter 7

1.5 Post-Conflict Linkages of Capitals and Sustainable Livelihoods

Case Studies

Case Study - One

Rehana Aziz is a teacher at the girls' primary school of Ronial, a small village eight kilometres west of Matta city. The area was worst affected during the civil war between the Taliban and government forces. Rehana said, "Insurgency and war has devastated my household life". She has five children and her husband is a retired school teacher. The school where she teaches was set on fire by the Taliban in June 2008, destroying the building and the furniture. She initially sent her son to Mingora city to continue his education. Later, when the violence spread to Mingora, she had no option but to send her children to Lahore, more than 600 kilometres away from her village. Curfews and violence made the lives of Rehana and her family extremely difficult. They could not go outside; food items were scarce and became very expensive. Wood, coal and oil for cooking were in short supply. The supply of electricity was completely disrupted without any efforts from the appropriate authorities to resume it. Women normally fetch water from a nearby spring; they could not do so easily anymore, so people sometimes did not have drinking water. The government gave little attention to supplying water or to developing other basic physical infrastructure in such villages.

She was not being paid a salary and her husband was not getting a pension, making the financial status of the family extremely vulnerable. She borrowed from her brother who lives in Karachi, but had to cut down many expenses including on food items. The stress on her financial capital had health costs for Rehana and her husband. There is a basic health unit (BHU) in the village, but its staff left and there was no source of medicines and medical care for Rehana's family or the whole village. She takes regular medication for a gastrointestinal problem, and the shortage of these left her unconscious on some occasions.

Finally, they decided to leave their home and went to Lahore to live with some relatives. She borrowed from other family members and had to sell her gold jewellery to meet the costs of her migration and the expenses of her children to sustain them in a far-off city. She describes those months as most difficult time of her life. The school was rebuilt after two years and she started teaching again, a job which she likes very much.

Recalling the war times she says all families in the village lived in continual trauma. She praised her neighbours and relatives who supported each other and were always willing to cooperate and help, though no-one had much to share. “We shared wood, sometimes food, and even sitting and spending time together with other people greatly helped”, she recalls about the strengthening of social networks in her village. Life at the time of the field study was apparently normal in Ronial: the school was functioning with a newly built building, and there was a doctor in the BHU with medical supplies. Shops had regular quantities of food and other items, and access to other areas was quite safe although everyone had to answer many questions at numerous heavily guarded military check posts. But how long it would take for Rehana’s family and other people to regain sustainable livelihoods was hard to guess.

Case Study - Two

Hamayun Khan is head of a quite large joint family; he owns a roadside restaurant in the village of Baboo, close to Khwazakhela city. This is an area which the Taliban completely occupied in the early days of the conflict. Hamayun Khan recalls, “We lost my uncle, two young nephews and a cousin during the Taliban era”. He owns some agricultural land where he had grown orchards of plums and peaches. War in the area and curfews forced not only his family but all people of his village to leave in 2008, like more than one million other people who left their houses and found refuge in other places or in refugee camps.

He, along with his family, lived for 13 months in Abbottabad, a city quite far from his village. For the first two months they had to live in a government school. The war and subsequent migration took its toll on all of his income sources: he had to close down his restaurant. His orchards were destroyed due to severe fighting in the area and were unattended during his absence. Both of his livelihood sources either ended or were damaged. The losses of financial capital posed a big question for him: how to sustain his family? The deaths of close family members and the responsibility to care for a large household took away his meagre savings; he sold the van, which he used for bringing stock to the restaurant, and two motor bikes belonging to his son and nephew, further depleting his assets and physical capital. Aside from borrowing from other people, he had no other option to support his family. Friends and relatives largely understood the vulnerability facing affected families, and social relationships and capital had positive contributions.

His children and nephews did not attend educational institutions during this time, and lost one complete year of education. Hamayun remembered, “Restarting education was difficult, initially there was no teaching staff, also children were scared to go to school and leave their homes”. The negative impacts in pursuit of human capital may have long term effects. His family’s medical expenses increased considerably because of various diseases, as they were living without proper shelter and most of the time eating unhygienic foods during their refugee period.

When they returned things were far from ideal. His house was badly damaged due to artillery fire, and his restaurant’s walls and roof had collapsed. The agricultural land was in a very bad state, and the fruit trees were close to dying. He borrowed more for rebuilding and still owes debts to many people. This left him more vulnerable and squeezed his financial and physical capital. The reconstruction and repayment of debts has affected his livelihood and his income has decreased substantially from pre-conflict times. He said, “tourists and visitors are very few in number so restaurants have lost clients and on the other side the orchards need more inputs and time to recover. But I am short of finances”. It might take years for him to regain a sustainable livelihood. Despite hard work, the depletion of various capitals had put him in a vulnerable position for successfully pursuing his livelihood. The area was peaceful at the time of the field study, but if insurgency re-emerges he might not be able to face the shocks of conflict and displacement. It remains possible he might support the militants to avoid further vulnerability and to ensure his household livelihood.

1.5.1 Interaction of Assets and Livelihoods

The case studies explain how the shock affected households not only in terms of income opportunities, but also in terms of possession of the five capitals and in pursuing pre-war livelihoods. The observed behaviour in the first case study explains these connections and relationships. Militants destroy a girls’ school and that results in loss of jobs and income for female staff. Loss of income affects financial resources and the household finally has no options other than seeking credit from other family members, or selling assets. Education, health and general wellbeing of the household deteriorate, indicating a negative impact on human capital, and similarly the natural environment for the whole village is contaminated as an aftermath of violence, curfews and military movements. The outward migration further damages livelihood assets and sustainability. Some government interventions might have helped, such as salary and other due

payments to the particular household but the broader benefits that accrue from development initiatives were not in sight.

The second case study involves the ultimate loss of human lives for a family which had a sustainable pre-conflict living. Conflict severely damaged their income sources, agricultural land, and other opportunities for sustainability. Loss of livelihood forced the whole family into a prolonged migration to find temporary refuge at a variety of places. The government established many refugee camps, but these were either completely without educational and health facilities or if they existed, they were insufficient. There was a major resource constraint for a developing country's government to support a large displaced population. As a result, the family members could not sustain their human capital. Their financial capital was under a lot of stress and short or long-term borrowing, and selling their physical assets were the only available survival strategies. After a prolonged absence from their home, the family returned back to restart their livelihood, but the damaged assets and fearful atmosphere prevented a smooth resumption of their previous lifestyle. They were not sure about their future vulnerabilities and livelihood opportunities, raising the question of whether the male members were at risk of joining the Taliban.

Household studies determine that assets interact and this interaction formulates livelihood opportunities and strategies. The adverse impacts of conflict on sustainable livelihoods of households raise questions about what opportunities are open for people, as it may take a long time to re-establish a sustainable income and living. If the post-conflict period has increased the vulnerability of households it may not be possible for them to sustain another external shock. The research *questions* in this thesis include identifying possibilities which can enhance livelihoods in Swat (see Chapter Seven) and thus decrease income-based incentives for joining the militants.

1.6 Significance of Research/Contribution to Knowledge

Global conflicts and their links with different parameters are widely studied and reported in the literature. These parameters consist of income, development and demographic characteristics and geographical factors which make people or a

region more prone to collective civil violence. However, a unified study finding relationships between income, well established development indicators and lack of democratic rights and the onset of conflict covering the first decade of the 21st century is lacking. This study aims to fill the gap. This study extends this analysis to the understudied area of intrastate violent conflicts in Muslim majority countries. It provides an empirical model which investigates links between various parameters at the global level and then in a subset of Muslim majority countries, and determines whether these links are substantially different from or similar to those found for countries in the larger global sample.

Integrating cross-country econometric work with country- or region-specific data is a very recent and promising direction of research in the economics of conflict (Blattman & Miguel, 2009). Collecting information and seeing the changes in the lives of directly affected people gives individuals and households centre stage in such studies. Some recent studies including those of Blattman (2009) on Uganda, Arjona and Kalyvas (2008) on Colombia, and Humphreys and Weinstein (2008) on Sierra Leone, collect data from conflict-affected regions to explain the consequences of civil wars. Previous research has not examined the conflict in Swat and the later civil war involving the Taliban and security forces. There is a particular lack of study of the repercussions on post-conflict household livelihoods, on household assets and their role in making livelihood choices. This study seeks to fill the void.

Finally, the simulation modelling technique is part of answering the final key research question which identifies the possibilities for revival and enhancement of post-conflict livelihoods in Swat. The complex interactions of assets, their enhancement, and likely post-conflict impacts from infrastructure development on livelihoods' revival will be investigated. This methodological technique was not found in literature studying post-conflict livelihoods. Hence this study will contribute to the literature not only in terms of understanding post-conflict impacts on assets and household livelihoods but also in determining revival options for livelihoods with increased wage opportunities in Swat.

In summary, this study, starting from a global perspective and then focusing on a recent region-specific conflict and its household impacts, aims to provide deeper understanding of conflicts and their repercussions. Its conclusions discuss maximising the benefits of post-conflict resettlement policies and minimising the negative impacts, such as reducing the chances of recruitment to militant organisations. This study will provide input to the government of the selected research country on post-war policy formulation with maximum integrated economic benefits.

1.7 Thesis Arrangement

Chapter Two analyses global conflicts and their links with income, well established development indicators and political rights, followed by a similar investigation into subsets of Muslim majority countries. The occurrence of conflict in the probit econometric model is taken as dependent variable, while proxies for income, development indicators, and political rights are used as independent variables. Chapter Two concludes with results for different sets of countries, which leads to a focus on a particular conflict that turned to civil war in Swat.

Chapter Three and later chapters are devoted to the conflict in Swat and its effects on livelihoods. Chapter Three discusses the selected country for research, Pakistan, and the background of dictatorships in nurturing radical religious ideas. It traces the background of the emergence of the Taliban across the country and in Swat particularly.

Chapter Four presents the details of the field study, which provided the required household data for studying post-conflict livelihoods in Swat. This chapter describes the questionnaire, research sites in conflict affected Swat district, data entry and collection details.

Chapter Five, using descriptive statistical analysis of household survey information, estimates the assets (human, natural, social, physical and financial), and losses for post-conflict households. The losses are quantified and income and changes in expenditures are estimated. Chapter Five also examines the post-conflict coping strategies of households.

The findings in Chapter Six originate from a cluster analysis that grouped households with distinct livelihood patterns. The econometric analysis estimates the effects of five core capitals on making various household livelihood choices in the post-conflict period. The significant effects of various assets help in modelling their interactions and role in increased livelihood opportunities emerging from positive shocks in Chapter Seven.

Chapter Seven is about post-conflict livelihood revival possibilities, which previous chapters established were much affected by the conflict. It observes the linkages of assets in determination of livelihood choices resulting from positive interventions to the regional economy. This chapter further discusses the economic constraints that could create motivations to join the militants. It identifies, using simulation modelling, the alternative opportunities in employment associated with increased wages. Such opportunities can facilitate labour movements tending towards profit-orientated sectors of Swat's economy.

Chapter Eight summarises the overall conclusions from the thesis, presents recommendations, and specifies the limitations of this research, which may facilitate future research with similar objectives.

Chapter Two

Economic Development and Freedom: Is Their Denial Linked to Violent Conflicts?

2.1 Introduction

Violence is omnipresent in the world around us. Theories abound on the determinants of global civil violence. However, two particular lines of reasoning have received more attention than others: one approach concentrates on conflicts of ideas, culture, and religious beliefs, which tend to cause violence among groups or against states. The other approach considers deprivation and grievances resulting from income differences and poverty, and denial of political rights as root causes of rebellion and violence (Gurr 1970; Sen, 2008). Violence, when it initiates and spreads across a region and transforms into a nationwide concern, hinders economic development. Its consequences include destruction of infrastructure, losses to human and other capitals, and to social and political institutions. Violence results in physical and psychological injuries and casualties. Violent conflicts make countries and their people insecure and vulnerable to intervention, by both state and non-state actors (Blattman & Miguel, 2009; Collier 2006, 2007). Conflicts create internal challenges for the government and the people, and trap a country in poverty, if the country is already less developed and has scarce resources. This mostly is the case, as countries at the bottom of the world income distribution have several times more violent internal conflicts than countries at the top (Blattman & Miguel, 2009).

With this background, this chapter addresses conflict as a serious human and developmental concern at the global level. It investigates contemporary reasons for public policy failures or interventions, which may cause or prevent conflicts. This chapter thus addresses the first key research question of this thesis, which is to probe links and the role of key economic and developmental indicators in quality of life with the occurrence of intrastate global conflicts. The research objectives in this chapter further include exploring the relationship between lack of democratic freedom and occurrence of conflicts. Extended econometric testing investigates these relationships in a subset of Islamic countries.

The analysis and discussions in this chapter explain connections between selected variables including income, economic development and lack of rights with the occurrence of conflicts of varying intensity, for different sets of countries. These include sets of countries at a global level, and specific subsets of Muslim majority countries. This extensive analysis covering the onset of conflicts will systematically lead to investigation of the post-conflict effects, at a micro, household, level. Subsequent chapters will thus focus on a particular conflict: the recent violent conflict in Swat, Pakistan and on its various effects on households' livelihoods, to address the remaining key research questions.

This chapter focuses on conflicts, instead on civil wars as found in most of the literature on the economics of conflict. This study takes the following definition of conflict from Conflict Barometer (2008, p.1), which is described in more detail later in the chapter:

(Conflict is) the clashing of interests (positional differences) over national values of some duration and magnitude between at least two parties (organized groups, states, groups of states, organizations) that are determined to pursue their interests and achieve their goals.

In contrast, the definition of the term 'civil war' has strict quantitative restrictions, including 1000 or more battle-related deaths in one year, and also requires having the state as a party.⁷ Some severe conflicts, such as that between Al-Fatah and Hamas in Palestine, and that for regional dominance between Liberation of Tamil Tigers Elam (LTTE)-East versus LTTE in Sri Lanka will not be categorised as civil wars, since the states were not parties in either case.

This chapter analyses global violent conflicts from 2000-2009. This analysis uses parameters which depend purely on public policies and their links with the occurrence of conflicts. This particular dimension, probing the reasons for conflict initiation, has been little studied, and no prominent econometric study is available which exclusively focuses on the covariates based on public policies. This study

⁷⁷ Small and Singer (1982 p. 210) defined a civil war with these characteristics "any armed conflict that involves (a) an internal military action (b) national government participates as a party (c) both sides effectively resist. Further, violence should be sustained and reciprocated, and war exceeds deaths (more than 1000 in a year)." On basis of this definition, The University of Michigan produces datasets on civil wars at the global level.

thus seeks to fill this gap for the first decade of this millennium. In total, 160 countries with populations of at least of one million are analysed in the cross-country analysis. Muslim majority countries (e.g. Pakistan, Iraq, Somalia, and Nigeria) were the hosts of many of the global violent conflicts during the study period and beyond. Western countries regard the recent decades of rising global insecurity as due to ‘Islamic terrorism’, which is rooted mostly in the Middle East and South Asia, and these countries have waged joint efforts to curb its origins in recent decades (Hiro, 2013). This cross-border terrorism, which is considered to originate from Muslim countries, is usually an offshoot of violent internal conflicts. Thus the focus was made specific to the Muslim majority countries to understand the links to the occurrence of conflict, and whether these links are substantially different from or similar to the reasons for conflict in the countries in the larger global sample. This extended analysis uses similar parameters and methodology as used in cross-country global analysis, and probes relationships with violent conflicts. These parameters include per capita income, economic participation, public health, educational provision and attainment. This study with its selected methodological technique and time-period contributes to the empirical literature on conflicts and civil wars in Muslim majority countries.

The significance of democratic governance and political freedom is also included. The positive association of democracy with development, despite some cynical views (see Barro, 1994, 1999; Minier, 2003), is quite well established.⁸ The next section reviews these linkages in more detail. This sets the boundaries of this chapter, which finds links between democracy, development indicators, and violent conflict.

2.2 The Literature Review

2.2.1 Dialectics of Growth and Governance

The significance of the role of effective voice and public participation through elected representatives in the decision-making process is discussed by many researchers. The connections between democracy and development are explored

⁸ Many studies support the linkage of democracy with growth and development: for example, Barsh, (1993); Baum & Lake (2003); Lipset (1959); Sen (1999, 2003); Scully (1988); Olson (1993).

in literature ranging from philosophy to political science to economics (Fedderke & Klittgard, 2013). The economic argument remains that democratic governance has more potential to decrease inequality with redistributive growth. Within the research tradition of cross-national quantitative studies, a seminal work is Martin Lipset's (1959) essay. The theoretical inspiration of this work is from modernization theory, in which society, economy and politics are systematically interrelated. Lipset (1959) argues and concludes that economic development and democracy positively correlate.

Olson (1993) finds more economic benefits overall when governments safeguard the rights of property and individual rights. Scully (1988), studying the role of institutional frameworks on the growth and efficiency of economies, establishes that politically open countries that abide by the rule of law and private rights grow three times more than countries which do not strictly follow laws, and do not safeguard private rights. These politically open countries are two and a half times more efficient as producers than countries which deny political freedom. Barsh (1992) and Bardhan (1993) support the positive correlation of political and civil freedoms with development. Elbadawi and Sambanis (2000), whose focus is Africa, conclude that political and economic development failures are responsible for civil wars in the war-torn continent. They find a higher prevalence of poverty and failed political institutions to be the basic reasons for civil wars in Africa. Simultaneously, improvement in Asia's economic and political indicators has decreased the risk of civil wars. Alternatively, Baum and Lake (2003), studying the indirect effects of development indicators on economic growth, find public health, particularly life expectancy, and education intimately interlinked with sources of growth.

Focusing on terrorism and exploring connections between a democratic environment and terrorist activities, Quan (2005) finds that democracy has a positive effect on reducing transnational terrorism. Increased citizen satisfaction lies in the redress of grievances, participation in the political process for safeguarding genuine interests and expression of dissent in peaceful manners. Bloomberg and Hess (2008) identify a deterrence of terrorism where development

and democracy, along with globalisation, have the potential to create peaceful environments for low-income countries. These factors can decrease both domestic and transnational terrorist acts. In addition, higher income is a deterrent to domestic terrorism in both rich and poor countries.

In alternative explanations, some studies dispute the links between political freedom and economic development. Barro (1994, 1999), for example, is sceptical about the positive relationship between freedom and development, particularly when high levels of freedoms are present. Minier (2003) also considers that growth-orientated institutions can be established in non-representative environments, even in authoritarian states. However, Sen (1999) observes that there is no convincing evidence that authoritarian governance is beneficial to economic development. Statistical studies as discussed earlier find no conflict between political rights and economic performance as democracy and liberty have their own importance in economic developmental processes. In another study, Sen (2008) identifies poverty and gross inequalities as good grounds for rebellion, even violent rebellion.

The above discussion largely finds positive links between development and freedom and as Fedderke and Klittgard (2013) conclude, political rights matter for economic growth. Sen (2003) observes the links between rights and conflicts, and suggests that it is important to examine the connection between political and civil rights and the prevention of conflict. If conflicts originate because of deprivation, grievances, and suffering, governmental response to the acute suffering of the people depends upon the pressure that people exert on the government. This is where the exercising of political rights (voting, criticizing, and protesting) can make a real difference. Blattman and Miguel (2009) consider that correlates of intrastate conflicts are well established. The likelihood of conflict increases with weak institutions, absence of equity and political freedom, and risks increase with poverty and income shocks. The next section reviews some literature that focuses on the economic causes of conflicts.

2.2.2 Deprivation and Inequalities

Many researchers have probed the links between economic deprivation and income inequalities and violent conflicts. One of the earliest explanations of individual motivations to join rebellions comes in the work of Gurr (1970). He argues in his frustration-aggression theory that when frustration is prolonged and felt with intensity, it results in anger and ultimately violence. People living on the proverbial edge are sensitive to declines in economic goods and frustration is a strong motivating force for violence. Sen (2008) explains the complex reasons for present and past violent conflicts, and distinguishes two approaches towards violence. One approach concentrates on the culture of societies, and the other on the political economy of poverty and inequality. Cultural theories look at violence in relation to modes of living, religious beliefs and social norms, and regard contemporary global violence as a “Clash of Civilizations”.⁹ He regards this approach as extremely limited and an extraordinarily crude way to understand the motives for violence. He notes:

“[This approach] serves as a major intellectual barrier to focussing more on prevailing politics and to investigating the processes and dynamics of contemporary incitements to violence.”

Explaining the other approach, which prioritises economic causes, and sees poverty and inequality as the root causes of violence, he refers it as a ‘momentous approach’ that challenges the simple cultural explanations. The injustice of inequality can create intolerance, and suffering from poverty can provoke anger and fury, forming a plausible connection between poverty and violence.

In contrast, two recent studies (Collier & Hoeffler, 2002, 2004) apply a rationalist¹⁰ model to civil wars and explain the initiation of civil war as a function of the opportunity to organize rebellion. They state that conflict reflects competition in capturing valuable natural resources, which is different from being a response to collective grievances. Collier and Hoeffler look at the opportunity

⁹ The ‘Clash of Civilizations’ theory basically argues that people’s religious and cultural identities will be the primary source of conflict in the post-cold war world. Samuel P. Huntington proposed this theory in 1992.

¹⁰ Grossman, (1991) and Hirshleifer (1995) introduced the rationalist model of crime, which models rebellion as an industry that generates profits from looting. Further, this theory holds that rebellions are motivated by greed. The model assumes too that subjective perceptions develop on each side that fighting could result in long term gains and violence is perceived to be more profitable than peace.

cost of rebellions. Low costs give a greater labour supply for wars, which is easier in poor countries where educational levels are low, and there are high numbers of unemployed youth. Inequality, according to them and to Feoron and Laitin (2003), plays no part in adding to the risk of civil war. Murshed and Tedkpeddon (2009) criticise their views, citing greed (economic opportunity to fight), and loot seeking as reasons for civil wars. They observe that the alternative hypothesis of grievance (justice seeking), which focuses on ethnic and religious exclusion, political repression, and horizontal inequality cannot be dismissed. They support the long-standing position taken by Gurr (1970) that relative deprivation, and the related grievances it produces, results in internal violence. Sen (2006), in the same context, argues that a sense of injustice can nurture discontent over longer periods. The leaders of rebellion movements can evoke memories of destitution to make new recruitments, as social disparities and exclusion are not easy to forget.

Humphreys (2003) looks at the economic factors that make some societies susceptible to conflict. He cites poverty as the main igniting factor and pro-growth policies as the main deterrents to conflicts. He notes that if statistical data do not find a relationship between inequality and conflicts, it may be because researchers are not working with the right data sets. Econometric research mostly uses overall inequality in a country, but what matters for conflict is the inequality between regions and groups known as horizontal inequality. Stewart (2010) agrees with this notion and finds positive relationships between horizontal inequalities and the incidence or intensity of violent conflicts. For example, Magdalena (1977) examines the Moro rebellions in the Philippines and finds a strong link between the relative deprivation of Muslims in differential returns to education and intensity of conflict. Murshed and Gates (2003) use inequalities of assets and human development as an indicator when studying the conflict in Nepal. They find a strong positive relationship between regional deprivation and the intensity of Maoist rebellions in the various districts of Nepal. The greater the degree of inequality in a district, the greater is the intensity of conflict.

The linkages between poverty, hunger and violence in African countries are explained by Fisman and Miguel (2008, p. 149). They state that lack of rain leads

to declines in income from agriculture, thus giving way to violence and war. A similar logic applies to other income shocks in Africa that include a drop in commodity prices. For instance, Rwanda heavily relies on coffee export, and when the world prices of coffee plummet, so do most Rwandans' incomes. This acts like a drought, leading to an unexpected decline in income that leaves people desperate and violence-prone. Murdoch and Sandler (2002) observe that violent conflict is not solely confined to a nation in turmoil. There are strong negative spillover effects in neighbouring countries, including disruptions of trade, increased risk perceptions of foreign investors, collateral damage from neighbouring battles, and resources in the economy are spent to assist refugees.

2.2.3 Terrorism: Conflicts and Civil Wars

Terrorism remains a very significant and realistic concern in both conflict-affected and in other potentially target countries. Violent conflicts are associated with terrorist activities, which occur beyond the conflict areas and spread across the country. Terrorism as a violent phenomenon links strongly with internal conflicts. This sub-section reviews some literature about such links and explains the varying nature of terrorist activities (domestic and cross-border). Compared to violent conflicts, terrorism can have different triggers, which may be economic, socio-political, geo-political, and religious. Sambanis (2008) argues that civil wars may lead to terrorism and vice versa and there are cases when civil war occurs with or without terrorism. Militant-dominated areas during internal conflicts are very conducive to terrorist training and recruitment (Moore, 2010). Terrorism has two dimensions: within the country and cross-border attacks. Domestic terrorist attacks result as a strategic extension of internal violent conflicts, to create internal fear, damage, and overall insecurity. The cross-border terrorist acts are usually a reaction of internal conflicts to targets outside the borders whom the militant organisations regard as directly or indirectly responsible for internal conflicts and other domestic problems (Abadie, 2006). The attacks of different radical Palestinian groups in Israel and other Western countries, and Al Qaeda's terrorist acts including the 11 September 2001 attacks in the United States are such examples. Another recent incident was the attacks on main city destinations in Mumbai, India, which were carried out by outside perpetrators in 2008. However, a clear-cut distinction between domestic and international terrorism is

hard to make. Domestic perpetrators usually have international connections. For example, the Taliban in Pakistan link with Al Qaeda and other organisations,¹¹ while Al Qaeda has links in many countries (Franco, 2009; Zaidi, 2008). These complex connections sometimes result in targeting foreign installations and people at domestic destinations. For example, the bombing in Bali, Indonesia, was conducted by a local militant group, which resulted in the killing of many foreigners in 2002.

As discussed above, one significant empirical result in the civil war literature is a robust link between per capita income and violent civil conflicts. While studying terrorism, particularly cross-border terrorism, I observed that some studies do not find evidence of this link with per capita income. Exploring the determinants of terrorism in Palestine, Krueger and Maleckova (2003) determine that poverty, educational attainment, and terrorism have little direct connection. They find that Palestinian suicide bombers and members of Hezbollah's militant wing are not economically disadvantaged or uneducated. This study mentions Angrist (1995) who argues that the civil unrest of the late 1980s coincided with increased unemployment rates in Palestinian youth (however, this point is not probed in detail). In another study, Krueger and Laitin (2007) find that developing countries with political repression are the source, while economically well-off countries are the targets, of terrorist activities. They determine that country-level Gross Domestic Product (GDP) and illiteracy are not good predictors for terrorist origins. The data used is based on a U.S State Department data set for 'significant' terrorist events ranging from 1997-2002. This study acknowledges that the data has not only limitations in its range but also in its description of international terrorism.¹² Within-country terrorist acts, including suicide bombings, have increased tremendously in the past decade in Iraq, Pakistan, Afghanistan, India, Russia, and in a number of war-prone African countries. Terrorist attacks in wealthier countries have decreased or are non-existent due to a much-increased

¹¹ The Taliban in Pakistan operate under different organisations, the largest being The Tehrik-e-Taliban (TTP), however, these have links in Afghanistan and other countries, under the more formalised leadership of Al Qaeda

¹² Abadie (2004) also questions the adequacy of the U.S State Department's dataset and mentions that former U.S defence secretary Colin Powell admitted errors and omissions in the construction of this data.

focus on security measures. Abadie (2006) notes that international terrorism represents a small fraction of world-wide terrorist activity. Moreover, the determinants of international terrorism may not be necessarily informative about domestic terrorism. If domestic incidents are taken into account from an updated dataset, the findings about the origin and targets (now mostly domestic) may be quite different.

Sambanis (2008) identifies regime type as more important than income in explaining terrorism, whereas income is more significant in the explanation of civil wars. He suggests that measures that can prevent civil wars are also reasonable deterrents for terrorism because of their inter-linkages. Economic development strategies that increase per capita income and education might help to reduce terrorism, particularly in cases where terrorism is a strategic extension of a civil war.

2.2.4 The Literature Focusing on Muslim Countries

As mentioned in the introductory section, many Muslim countries in the Middle East, South Asia, and Africa are victims of violent conflicts. Not only does their internal violence have domestic repercussions, it also results in terrorist activities both within the country and sometimes directed at targets in other countries. The post-2001 literature finding links between Islam and militancy is largely focussed on anti-Western violence (more emphasis remains on anti-U.S actions), and terrorism. There are few studies which focus on intrastate conflicts in Muslim countries. However, these conflicts, as discussed earlier, facilitate and result in increased terrorist activities.

Espisito (2002) tracks the origin of terrorist ideology in different Islamic sects. Mamdani (2002) probes the historical and cultural roots of terrorism in Muslims, in answering the question, 'Why do they hate Westerners?' Fair and Shepherd (2006) study the support for terrorist attacks from a dataset of 14 Muslim countries. They conclude that younger persons and people who for some reasons consider the existence of Islam in danger are supportive of terrorist acts. However, the authors themselves are doubtful about the phrasing of some questions and conclusions drawn from the survey-based data which they use in their study.

Studies finding links between development indicators, civil wars, and terrorism in the Muslim countries include Testas (2004) who probes the determinants of terrorism and regards his study as an extension of the research of Krueger and Maleckova (2003), which is confined to Palestine. He uses a larger sample of 37 Muslim countries, and includes additional variables like political repression and civil war, and their connection in fostering terrorist activities. He concludes that education is a positive determinant of terrorism, while income is more significant for onset of civil wars than terrorist activities. Alternatively, MacCulloch and Pezzini (2010) probe the factors of support for rebellions and terrorism and find negative correlation between GDP growth and revolutionary support. This study further explores the effect of religious belief on people's taste for revolt and finds that being religious lowers a person's chance of revolt in freer countries, while this effect totally disappears in non-free countries.

Exploring another dimension, Toft (2007) identifies reasons for Islam's higher representation in religious civil wars than other religions from 1940-2000. He argues that political elites disguise the issues of contention (economic and political) as religious issues that help them get domestic and external support. It is more effective in Islam with the concept of *jihad* (holy war). Noting a trend, he identifies that developed countries take back the money paid for petroleum purchases to Arab countries by selling arms, which creates more insecurity and increases the likelihood of civil wars. Comparing democracy in Arab and non-Arab Muslim countries, Stepan and Robertson (2003) establish that though Islam is common in the two subsets, a remarkable difference exists in terms of democratic and electoral successes (much higher in the non-Arab subset). They further observe that authoritarian Arab countries (most have wealth from oil) spend a higher percentage of GDP on security than any other region in the world, surpassing even NATO countries. This plays a role in the prevalence of conflicts in these countries, which subsequently reinforce and prolong authoritarianism in the region.

The relationships between democracy, dictatorship, and development somehow remain a contested area among researchers. Some even argue for 'developmental

dictatorship' (see Gregor, 1979).¹³ However, most of the empirical findings on the subject as discussed above support and establish the idea that democracy creates a favourable atmosphere for developmental processes. Most significantly, there is no fundamental conflict between political rights and a successful developmental process.

The study period covered (the first decade of the 21st century) in the upcoming cross-country analysis of the onset of conflicts had high incidences of global intrastate conflicts and civil wars. The forthcoming analysis is at the global level and extends to the subset of Muslim majority countries. This unified approach was found lacking in the literature reviewed. This chapter, adopting a unified approach, with variables representing contemporary reasons and with a focus on an understudied period, thus contributes to the literature examining the determinants of global conflicts. The definitions and data used are described in the next section.

2.3 Definitions and Data

For the investigation of the occurrence of conflicts, 160 countries are included, with populations of at least 1 million in mid of study period, 2005 (excluded were North Korea, Taiwan and Hong Kong due to unavailability of data for key variables). Sub-section 2.3.1 specifies the econometric model used.

This analysis adopts the definition of conflict from Conflict Barometer (2008), an annual publication on global conflict analysis.¹⁴ This publication classifies conflicts as crisis, severe crisis and, in the most extreme form, civil war, represented by intensity levels 3, 4 and 5, respectively. The Heidelberg Institute for International Conflict Research (HIK)'s classification differs from the quantitative classifications of conflicts, which considers war to exist when there are 1,000 or more battle-related deaths in a year.¹⁵ An absolute quantitative

¹³ James Gregor (1969) regards Fascism as a mass-mobilising developmental dictatorship in which economic policies are consistent with modernisation and promote swift economic growth through rapid capital accumulation by large profits. However, these are the product of suppressed wages and salaries.

¹⁴ This is annually published by The Heidelberg Institute for International Conflict Research (HIK)

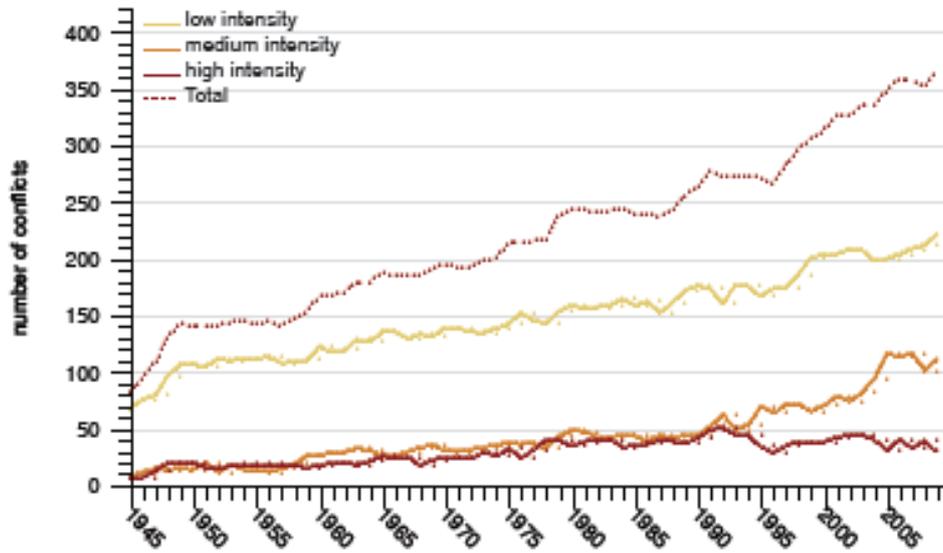
¹⁵ This concept remains vague: as Sambanis (2004) notes, does it mean battle deaths or also civilian deaths?

distinction of wars in practical terms is difficult to make (what if there are 999 deaths in a year or if there are different estimates which give different mortality figures?). Most importantly, it is very difficult to count the exact number of victims during a conflict, particularly in developing countries with limited or sometimes concealed information (Mayer, 2006). The second category of quantitative estimates regards civil war as minor if the number of deaths in a year is 25 to 999, and these remain out of sight in many studies. Conflicts can sometimes be very severe but may not exceed 1,000 deaths in one year and will remain in the minor category in quantitative estimates. This criterion may lead to the apparent incidence of more cases of civil wars in more populous countries. For example rioting in Nigeria or a civil war in India is much more likely to generate large number of casualties than a similar event in smaller Fiji or Cyprus. Sambanis (2004) observes that annual data on deaths and displacements are not available for most civil wars, making it quite difficult to study escalation and conflict intensity. HIIK's qualitative classification identifies a crisis when at least one party uses violence: a severe crisis occurs when violence is used repeatedly in an organized way. Civil war is thus an aggravated form of severe armed conflict in which violent force is used in continuity, and in an organised and systematic way. The conflicting parties exercise extensive measures and the extent of destruction is massive and prevails over an extended time. Interstate conflicts that may have other causes, like historical territorial claims, are not included in this analysis.

In total, 365 political and ideological conflicts were active in 2009 (at the end of study period). Of these, 31 conflicts were fought out with massive violence, and termed civil wars (Conflict Barometer, 2009). Figure 2.1 shows the rise and decline of conflicts in the post-WWII era.

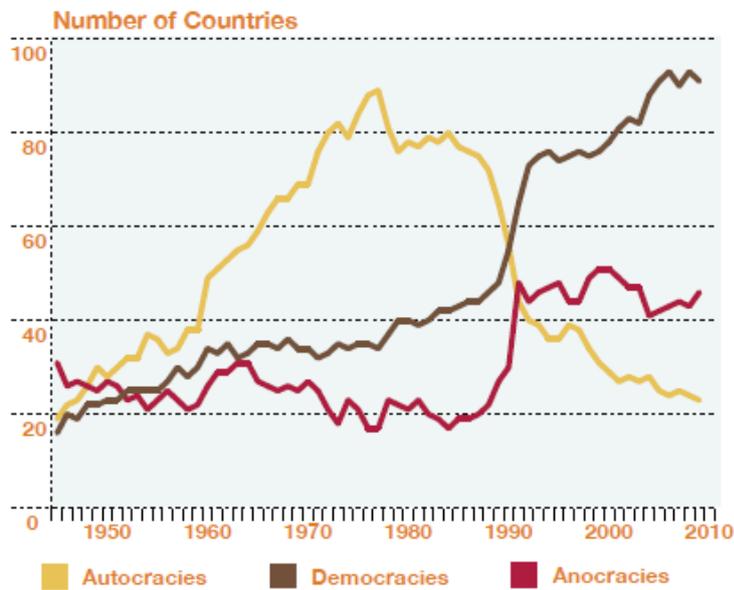
Figure 2.2 shows that democracy remains the dominant form of governance at a global level, with the highest number of countries following the system in 2005. Then a mixed trend of decrease and increase follows for this governance system, during the second half of the decade.

Figure 2.1: Global Conflicts of Low, Medium and High Intensity 1945-2009



Source: Conflict Barometer 2009, p. 4

Figure 2.2: Political Systems Worldwide - 1945-2009



Source: Peace and Conflict (2012) Executive Summary, p. 19

New conflicts emerged during this period, and there was resurgence of armed violence in countries where conflicts were previously dormant or of low intensity for quite some time. For example, in 2007 the conflict between rebel groups in Colombia and the conflict in Myanmar intensified. In 2008, conflict in Chad escalated between various rebel groups, while in Pakistan civil war between the Taliban and the state forces intensified. In contrast, a few armed conflicts ended during these years, in Sri Lanka, Nepal, and the Maldives, and one each in Indonesia, the Philippines and Chad.

Table 1 contains descriptive statistics of the variables. Appendices 1 and 1A provide lists of the countries where conflicts were reported, and are analysed. Appendix 2 provides detail about the data sources.

This study used various predictors for income, economic development and political rights in different regression models. For example, in model 3, the United Nations Human Development Index (HDI) has been used, instead of GDP per capita.¹⁶ The HDI has a 0-1 range. The closer the index is to 1, the better is the country's performance in human development. The measure of (or absence of political) freedom and democratic rights is Freedom House's Political Rights Index (PRI). In conformity with Abadie (2006), the political rights index is used instead of the Civil Liberties Index: the same organization publishes that index. These two measures however, are highly collinear as is evident from various years' scores reported by Freedom House: the empirical results do not depend upon which one is used in the regressions. In model 7, instead of political rights, the Political Terror Scale (PTS) is used.¹⁷ This scale is in contrast to the freedom and liberties measures, and absence of rights leads to human rights violations and political terror, largely by state institutions.

¹⁶ This follows Abadie's (2006) approach, using HDI in place of per capita income for determining the roots of terrorism.

¹⁷ Amnesty International and U.S State Department code PTS from the yearly country reports on human rights practices.

Table 2.1: Data Description and Descriptive Statistics

Variable	Definition	Obs.	Mean	Min	Max	S.D
<i>Conflict Occurrence</i>	Conflict Barometer Reports- 2002-2009- Heidelberg Institute for International Conflict Research	160				
<i>Economic Variables</i>						
GDP per capita (PPP)	GDP per capita for the year 2000 in PPP \$ -In theory 1 PPP \$ has the same purchasing power in the economy as 1 US \$ has in the U.S economy (HDR, 2008)	157	8399.5	290	50061	9278.5
Human Development Index (HDI)	Human Development Reports United Nations – 2000 & 2002. HDI has three components; it measures the well-being of people on the dimensions of income, health and education	153	0.69	0.28	0.94	0.19
<i>Lack of democracy</i>						
(PRI) Lack of political rights	Freedom House U.S. Index of Political rights – PRI has a 1 – 7 range, where the lowest score denotes the presence of most political freedom and vice versa. The average is taken for 2001 -2009	160	3.59	1	7	2.1
(PTS) Violation of human rights and political terror	Repression and violation of human rights by state authorities: it ranges from 1 to 5. Lowest with secure rule of law and highest with widespread terror to whole population. Average values.	156	2.4	1	5	1.12
<i>Development – Quality of Life</i>						
Under 5 mortality rate	UNICEF- Child mortality statistical tables. Base year values	157	64.4	4	257	65.83
School Life Expectancy (SLE)	United Nations Statistics Division’s composite index for educational opportunities in a system	147	11.4	3	20	3.49
Youth unemployment percent -Age 15 - 24	The data are for the base year 2000, if not available then closest to the base year. UN Statistics and (KILM), ILO	115	17.9	3.2	58.6	11.52
<i>Public Institutional competitiveness</i>						
Corruption perception Index (CPI)	Transparency International. The score ranges from 1-10. A high score indicates the country is considered fairer with less corruption. Average values.	160	3.9	1.4	9.5	2.1

2a – For the years 2000 and 2001, Uppsala Conflict Data is used, as HIIK’s reports for these years are not available in the English language. Sierra Leone is included for the year 2000 from this data set. b – for Afghanistan, Mauritius and Liberia the GNI per capita (PPP) is taken from World Development Indicators 2b –Number of observations vary for variables as data is unavailable for some countries e.g. HDI data is not available for all 160 countries

Among the developmental variables, survival and health for children under five years of age is used for the base year, 2000. Child mortality is regarded a sensitive indicator of the quality of life and has a strong correlation with income per capita. It is a proxy for overall economic development and a country's capacity to deliver core services (Goldstone et al, 2000, p. 14). Sen (1998) suggests that in judging a person's advantages and deprivations, we have to shift our attention from an exclusive focus on income to things that people have reason to value intrinsically. This establishes a case for concentrating on the characteristics of living and mortality. (It is to be noted that an increase or decrease in mortality has strong economic causes). The mortality rate is used as a proxy for quality of life, opportunities, and income in some models. The values for the base year 2000 are to assess the notion that violent conflicts destroy infrastructure including health services, which results in worsening health indicators.

School Life Expectancy (SLE) is an index that provides an estimate of the number of years of education that a child can expect to receive upon entering school. Youth unemployment for those aged 15-24 years is a proxy for economic activity and economic participation by young people. Some studies regard this age group as most vulnerable to rebel recruitment (see Collier & Hoeffler, 2004). The Corruption Perception Index (CPI) developed by Transparency International is published every year, and is based on various informational sources from the countries it ranks. It represents a proxy for institutional strength and fairness. The CPI defines corruption as misuse of public power and resources for private benefits. The data used for income and development variables are for the base year 2000 or the closest available yearly data figure.¹⁸ However, for a few variables, average values are calculated and utilised e.g. lack of democracy and proxy for institutional strength. Table 2.1 provides these details.

¹⁸ Data for some key variables like literacy, HDI and GDP per capita for some African countries and others like Afghanistan and Iraq is not available for all years. This approach was found most practical for this study.

2.3.1 Model Specifications

A binary Probit model is used where Y represents the presence/absence of conflict and the vector of regressors X from the data is assumed to influence the occurrence of conflict. A general specification of the model is:

$$\Pr(Y = 1 | X) = \Phi(X'\beta),$$

where \Pr denotes probability and Φ is the cumulative distribution function (CDF) of the standard normal distribution. The parameter β is typically estimated by maximum likelihood. A country is coded 1 if conflict is reported during the study period, otherwise 0. This follows Elbadawi and Sambanis (2000) and Sambanis (2001). They observe, however, exclusively the civil war's onset. The covariates in different models are proxies for economic status, democracy, developmental goals, quality of life, and institutional strength.

Four groups of countries are analysed. The selected 160 countries for global analysis are classified in two groups. One consists of 87 countries where conflicts of level 3, 4 and 5 are reported by HIIK and are coded as 1 in the model. The second group comprises 45 countries (among 87 countries) where severe violent crises or civil wars (level 4 and 5) occurred during the ten-year study period, and are coded as 1. This separately observes the links between explanatory variables with varying intensity of conflicts. A similar classification forms the two Muslim subsets. Following a similar empirical technique, 42 countries with populations of more than 1 million and with a 50% or more Muslim population is analysed. This forms two Muslim subsets of 29 countries with conflicts of level 3, 4 and 5, and 17 countries which were identified as having severe crises and civil wars during the decade.

Tables 2.2 to 2.5 report the empirical results with marginal effects. Marginal effects are an informative way to summarise how change in a response like increased income or literacy relates to change in a predictor. Marginal effects or partial effects measure the effect on the conditional mean of Y that will be produced by 1-unit change in one of the regressors X_k , holding all other X s equal at mean values. In Probit models, if the coefficient of X is statistically significant,

the marginal effect explains that a one unit change in the value will affect the z score of the Pr (Y=1) by the value of the respective coefficient (Cameron & Trivedi, 2009). Halloran (2010) notes that marginal effects provide a good approximation of change in Y that are produced by a change in predictor X variable, for nonlinear econometric models. With binary dependant variables, they provide some of the same advantages the Linear Probability Model (LPM) does. These give a single number that expresses the effect of a variable on Pr (Y=1).

2.4 Results and Discussion

To address any possible multicollinearity issues, correlation analysis was performed before finalising covariates for the different models. For example, as mentioned in the previous section, the under-5 mortality rate has strong correlations with income per capita: these are not used simultaneously in any single model. Similarly, income and net secondary school enrolment were found to be strongly correlated, and are included separately in the models. This correlation result in this data set is in agreement with Collier and Hoeffler (2004). However, in the analysis of a purely social and human phenomenon like the occurrence of conflict, there may be many things which move in the same direction and correlations may not necessarily explain the cause. Finally, the selected variables do not have strong correlation coefficients. Models 1 and 2 in Table 2.2 analyse the effects of per capita income and democracy, from low intensity conflicts to the extreme form, civil war. The expected signs show that the predicted probability of 1 percent increase in log per capita GDP (PPP) is associated with a 0.224 reduction in the probability or a 22.4 percent decrease in chances of occurrence of conflict, given that all other variables have equal values at their means. The probability associated with income is very significant. In model 2, one unit increase in the political rights score, which indicates less democratic freedoms, increases the chances of conflict by 9.3 percent. Column 3 notes the fundamental argument that countries must aim at development and more freedom. The Human Development Index alongside the index of lack of democratic freedom is included in this model. Both freedom and human development are significantly associated with violent conflicts and have the expected signs. A higher HDI value for a country and the presence of more political rights decrease the chances of conflict. This finding makes sense against

the background of relevant studies, such as Sen (1999), who considers that addressing major developmental concerns like poverty, authoritarianism and poor economic opportunities, as well as systematic social deprivation, is fundamental to minimising social tensions and related larger risks, such as mass violence.

Models 4 to 7 observe the significance of different development indicators. In column 4, school life expectancy and youth unemployment remain insignificant while per capita income and democracy reflect strong links with the probability of occurrence of conflicts. However, during data collection and analysis, it was observed that there might be data shortcomings, particularly for the unemployment data.¹⁹ This aspect of unemployment data will be discussed further in the concluding paragraphs of this section.

In model 5, infant mortality rate, democracy, and school life expectancy are included, as proxies for quality of life (health), freedom, and education. The results indicate that lack of democracy and higher under-5 mortality rates have statistically significant links with conflict risks. In model 6, the explanatory variables are political rights, youth unemployment, and adult literacy rates. Less democratic rights and lower adult literacy rates significantly increase the chances of conflict. Thus low adult literacy at a global level increases the probability of more conflicts. In the last column of Table 2, when the variable ‘political terror’ is included, adult literacy rate and adult unemployment rates have no explanatory power. Political terror and human rights violations are in contrast to democratic freedom and increased repression has significant links with violent conflicts. For example, the PTS scores for some countries with an average range of 4 to 5 include: Afghanistan, Pakistan, Saudi Arabia, Chad, Israeli occupied territories, Congo, Iraq and Somalia; all host to high intensity violent conflicts, and mostly having a history of authoritarianism.

The corruption index is significant for this global set of countries. Corruption, as CPI values in the data show, is prevalent in authoritarian societies and in well-

¹⁹ Data was taken from key indicators for Labour Market (KILM) a source of ILO, and United Nations Statistics Division but that in many cases relies on individual country surveys done by host organizations.

developed democracies like India (CPI average is 3.1). In developed countries like Italy, Greece and South Korea, it averages 5 or even lower (the best score is 10). It is an indicator of public institutional performance, weak institutions, and misuse of public power for private gains. However, the index itself is defined as being based on perceptions about prevailing corruption resulting from surveys, but this is found to be the most used global index of corruption in the relevant research studies (Lambsdorff, 2002).

To sum up the findings in Table 2.2 for models 1 to 7, the effects of per capita income, the index for developmental process (HDI), and democratic rights on conflict risk are highly significant. Infant mortality significantly associates with conflicts when the two manifestations for quality for life (health and education) are grouped with democracy. The link between infant mortality and conflicts was not found in the studies probing relationships of various covariates with conflicts as discussed earlier in the chapter. The quality of public institutions in terms of the corruption index matters for the outbreak of conflicts in the last model along with political terror.

The results do not suggest strong linkages of conflicts with unemployment. However, this study observes that though the data set used is from credible international data sources, it is mostly collected and reported by individual countries, and may have measurement errors. For example, for Burundi, Benin and Chad the adult unemployment rates are reported at just 1 percent by the International Labour Organization (ILO), sourced from household surveys performed by the respective domestic institutions. This is close to full employment, which is doubtful for conflict-ridden developing countries. Comparing some more data, the unemployment percentage for Australia and Bangladesh (9.4 and 9.3), and Pakistan and Norway (both 7.5) are almost the same according to the data source used. This seems implausible, particularly when high intensity conflict continues e.g. in less developed Pakistan, substantially reducing economic growth and investment.

A few countries with a reported unemployment level of 1 percent (having conflicts) were omitted from the sample data. However, the possible lack of accuracy in the unemployment figures may be a shortcoming in this analysis. One drawback of unemployment data, which the United Nations Statistics Division in its 2009 reporting identifies in the technical notes, is significant. It notes that national definitions of unemployment may differ from the recommended international standard definition. The national definitions vary from country to country. Such contradictions make inter-country comparisons more difficult, as international organisations use variety of types of source to obtain information on unemployment and there remain differences in the scope and coverage of such sources. Moreover, many conflict-ridden countries do not report unemployment data e.g. Afghanistan, Iraq, Libya, Rwanda, Sudan, Chad and Angola. Finally, it was also observed that in some countries, data on either adult unemployment or youth unemployment were not available.

2.4.1 Countries with Severe Conflicts and Wars

The second global set consists of 45 countries among 87 (with conflict of levels 3, 4 and 5). In these countries conflicts in severer forms (levels 4 and 5) were present or civil wars occurred. These are analysed separately with similar modelling techniques. Table 2.3 presents the results of this analysis. Models 1 to 3 have similar significant results to those presented in Table 2.2. The index for quality of life (HDI) has a very high probability value of 0.62 for decreasing the conflict risk. Models 4, 5 and 6 are in contrast to the earlier analysis; democratic rights are the only significant factor which links with the high intensity conflict risk. In models 4 and 5, one unit increase in political rights score (shows decrease in rights) increases the probability of occurrence of severe conflict by values of 0.059 and 0.049 respectively. Model 6 has similar findings as political rights are significant, but column 7 gives an unexpected result. Along with political terror, which is highly significant, increases in adult literacy rate decrease the probability of severe conflict at statistically significant levels. However, the probability value (- 0.002) is quite low as compared to other significant values.

Table 2.2: Probit Analysis for Onset of Conflicts – 2000 -2009
Sample consists of Countries with **all levels of violent conflicts**
Dependent Variable: Occurrence of Violent Conflict

Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of per capita GDP (PPP)	-0.224*** (0.039)			-0.289*** (0.095)			
Democracy – Political Rights		0.093*** (0.020)	0.055** (0.023)	0.076** (0.035)	0.073*** (0.025)	0.106*** (0.031)	
School Life Expectancy				-0.051 (0.034)	-0.00 (0.023)		
Youth Unemployment (15-24) %				0.001 (0.00)		0.00 (0.00)	
Adult Unemployment Rate 15 plus							0.015 (0.018)
Under 5 mortality rate					0.002** (.001)		
Human Development Index			- 0.893*** (0.274)				
Corruption Perception Index							-0.080** (0.035)
Political Terror							0.288** (0.143)
Adult Literacy rate 15 plus						-0.005* (0.00)	-0.007 (0.006)
Observations	157	159	152	108	143	115	124

Note: *Standard errors* are in parentheses - *** , ** , * , indicate significance at the 1, 5, and 10 % level

Table 2.3: Probit Analysis for Onset of Conflicts – 2000-2009
Sample consists of Countries with **Severe Crises and Wars**
Dependent Variable: Occurrence of Violent Conflict

Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of per capita GDP (PPP)	- 0.151*** (0.031)			-0.654 (0.056)			
Democracy – Political Rights		0.078*** (0.017)	0.052*** (0.019)	0.059*** (0.022)	0.049** (0.020)	0.064*** (0.021)	
School Life Expectancy				0.00 (0.02)	-0.027 (0.019)		
Youth Unemployment (15-24) %				-0.003 (0.00)		-0.002 (0.003)	
Adult Unemployment Rate 15 plus							0.006 (0.00)
Under 5 mortality rate					0.00 (0.00)		
Human Development Index			-0.623*** (0.211)				
Adult literacy rate 15 plus						-0.002 (0.001)	-0.002* (0.02)
Corruption Perception Index							-0.030 (0.041)
Political Terror							0.183*** (0.047)
Observations	157	159	152	108	143	114	124

Note: *Standard errors* are in parentheses, ***, **, *, indicate significance at the 1, 5, and 10 % level

The findings of model 6 in Table 2.2 and of model 7 in Table 2.3, that a minimum level increase of literacy can decrease the chances of severe conflicts, seem logical in the global context. More education potentially leads to better employment opportunities, and can create barriers to recruitment into the militant organisations. Murshed and Tadjoeeddin (2009) conclude in this regard that recruitment becomes an easier option for young unemployed males, in a setting of widespread poverty and scant education.

2.4.2 Results from the Muslim Subset: All Levels of Conflicts

This sub-section extends the above analysis and focuses on countries with majority (more than 50 percent), Muslim populations. A similar empirical technique applies and the same explanatory variables are part of this analysis. According to the adopted definition of conflicts in this chapter, 87 countries had conflicts of intensity levels 3, 4 and 5. The number of Muslim majority countries having conflicts of these intensities is 29, out of the total 42 selected Muslim countries. Among global conflict-affected countries, 33 percent were Muslim majority countries (29 out of 87), engaged in violent conflicts and civil wars. Table 2.4 presents the findings of this analysis.

Models 1, 2 and 3 have similar significant results as in the global analysis (consisting Non-Muslim and Muslim sets-Tables 2.2 and 2.3), but have different likelihoods for outbreak of conflicts, the highest being for HDI in model 3 alongside lack of democratic freedoms. The strong effects of human development achievements are validated by the data, which includes African Muslim countries such as Chad, Burkina Faso, Somalia, Niger, and countries in South Asia like Pakistan, Bangladesh, and Afghanistan,²⁰ which have low HDI standings. However, some exceptions in this subset are the United Arab Emirates, Qatar, Saudi Arabia, and Jordan with reasonable human development records. These mostly Middle Eastern examples are under monarchical or authoritarian rule, thus supporting the connection of less freedom with occurrence of conflicts.

²⁰ HDI is not available for Afghanistan for the study period but other relevant indicators for development are quite low.

Models 4 to 7 contain two exceptions of interest. In model 4, income is statistically not distinguishable from zero. The sample includes 16 oil- and resource-rich Arab countries, and their high incomes may be influencing this finding. Stepan and Robertson (2003) identify that not a single Arab country has a per capita income less than US \$ 1,500, while 33 percent of non-Arab Muslim countries do. In model 7, adult literacy has a statistically significant effect on the probability of occurrence of conflicts. Prevailing and past Muslim attitudes of negating non-religious education (sometimes a cost-based decision), contribute to the low literacy, which results in low paid jobs or unemployment. Among recent Islamic ideas, *Wahabism*²¹ has spread across many Muslim countries since the 1970s. The spread of these ideas is mostly facilitated and financed by the Saudis. One of its results was the establishment of thousands of madrassas and large enrolments in these seminaries. The preference for madrassa enrolment originates both from ideological beliefs and because of the free mode of learning. Madrassas stick to a pre-scientific curriculum and act as recruiting places for militant Islamists (Hoodbhoy, 2011).

2.4.3 Muslim Sub-set with Severe Crisis and Wars

Numerically 17 and proportionally 40 percent of Muslim countries experienced severe conflicts or civil wars during the study period. Table 2.5 presents the empirical calculations of the analysis. Models 1 to 4 provide similar findings as in the previous analysis. Political rights with a positive sign significantly affect the probability for occurrence of conflicts. Lack of democracy remains statistically significant in all the models, when used as a predictor. Typically, as Stepan and Robertson (2003) conclude, lack of democracy is a phenomenon in the Arab Muslim countries; it is not that all Muslim countries lack democracy. Electoral freedom and political rights are present in non-Arab Muslim countries like Turkey, Malaysia, and Indonesia, in west-African Senegal, and in low-income Bangladesh and Pakistan.

²¹ It's a sect in the Muslim population and has strict religious views. More details are given in Chapter Three.

Model 7 finds that a lower corruption index (indicating more corruption) in public institutions and use of public offices for private gains, significantly increase the likelihood of civil wars in Muslim countries. Other determinants in this model are statistically insignificant. Of 17 countries having severe crises or wars, 14 Muslim countries have a CPI lower than 3. This can be questioned as a reverse causality; wars destroy institutions, and affect quality of public services, and the weakened governance structure can lead to public dissatisfaction. Once this dissatisfaction is widespread and regimes and institutions are widely perceived as incapable, conflicts can be prolonged for years, and that is usually the case in this subset of countries. However, it is relevant to ask the question: while war affects institutions and these can be inefficient in conflict-affected countries, why do they have lower CPI values? The answer probably lies in non-adherence to legal norms in these countries (e.g. judges are empowered to apply personal interpretation of Sharia law in Saudi Arabia), and in biased judicial systems that favour the powerful. In some Arab countries there are separate judicial mechanisms for nationals and foreign residents. Moreover, low paid public jobs in less developed countries and an absence of accountability mechanisms (which contribute to the lower value for the corruption index), may become possible motivation for unfair practices and misuse of power.

Table 2.4: Probit Analysis for Onset of Conflicts – 2000-2009
 Sample consists of Muslim Countries with ≥ 50 percent Muslim Populations.
With all Levels of Violent Conflict
 Dependent Variable: Occurrence of Violent Conflict

Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of per capita GDP (PPP)	-0.101*** (.0240)			-0.395 (0.030)			
Democracy – Political Rights		0.060*** (0.013)	0.043*** (0.013)	0.030** (0.132)	0.045*** (0.015)	0.031*** (0.011)	
School Life Expectancy				-0.001 (0.011)	-0.006 (0.015)		
Youth Unemployment (15-24) %				-0.00 (0.00)		-0.00 (0.00)	
Adult Unemployment Rate 15 plus							0.003 (0.003)
Under 5 mortality rate					0.001* (0.00)		
Human Development Index			-0.397*** (0.146)				
Adult literacy rate 15 plus						-0.002** (0.001)	-0.002* (0.02)
Corruption Perception Index							-0.075*** (0.057)
Political Terror							0.043 (0.02)
Observations	157	159	152	108	143	115	124

Note: *Standard errors* are in parentheses - - ***, **, *, indicate significance at the 1, 5, and 10 % level

Table 2.5: Probit Analysis for Onset of Conflicts – 2000-2009

Sample consists of Muslim Countries with ≥ 50 percent Muslim Populations

With Severe crisis and Wars (Level 4 and 5)

Dependent Variable: Occurrence of Violent Conflict

Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of per capita GDP (PPP)	-0.04*** (0.017)			-0.217 (0.300)			
Democracy – Political Rights		0.032*** (0.010)	0.021** (0.009)	0.025** (0.119)	0.021* (0.01)	0.02** (0.009)	
School Life Expectancy				0.008 (0.112)	-0.00 (0.10)		
Youth Unemployment (15-24) %				0.002 (0.016)		0.00 (0.00)	
Adult Unemployment Rate 15 plus							0.003 (0.002)
Under 5 mortality rate					0.00 (0.00)		
Human Development Index			-0.190* (0.104)				
Adult literacy rate 15 plus						-0.001 (0.00)	-0.00 (0.00)
Corruption Perception Index							-0.028** (0.013)
Political Terror							0.036 (0.024)
Observations	157	159	152	108	143	115	124

Note: *Standard errors* are in parentheses - ***, **, *, indicate significance at the 1, 5, and 10 % statistical level

2.5 Conclusions

What links with the occurrence of armed conflicts? Sorting out the precise answers is difficult. Each conflict is as different as the society that produced it. Conflicts may have multiple layers of causality: grievances, personalities, hatreds, beliefs, mistakes, and so on. This chapter probes violent conflicts and their connections with a range of income and developmental parameters. It explores these connections purely in terms of public policy mistakes. The results and discussion provide more opportunity to identify possible interventions, and to decrease the chances of conflict. We listen to the news and see that wars are going on in poor countries. If observed more closely, these are the countries which also deny democratic participation. Sometimes violent conflicts occur in places like the Basque region of Spain and Northern Ireland, which are not poor, or in India and Sri Lanka, which have records of democratic achievement. Therefore, we may have to find determinants beyond simple cross-country analysis.

Country-level data in cross-country analysis has its limitations. For example, the data on income is not reflective of the conditions in a particular war-prone area. Poor countries can also have horizontal inequalities as identified by Stewart (2000); inequalities between groups and regions are not reflected in national incomes and accounts. Sambanis (2004) observes that individual and group-level conflict factors such as poverty or ethnic hostility are imperfectly tested at the national level.

Since World War II, Europe and North America have been prosperous and democratic, and have developed well-functioning welfare-based institutions along with achievements in human development. These countries successfully created domestic economic and social environments which offer better opportunities for all. Except for some very rare incidences, they have had no large-scale conflicts or intrastate wars. Their success forms contemporary plausible connections between economic development, democratic rights, and conflicts. However, some researchers on armed conflicts may find income, poverty, inequality and democratic rights irrelevant in conflict-stricken poor countries, which are mostly battlegrounds for internal conflicts, and instead advance civilizational and cultural

clashes or greed-based motivations as reasons for violence. Such reasons differ in studies on the subject and in this analysis too.

Economic development and democracy are mutually reinforcing and parallel phenomena. About five decades ago, Martin Lipset's (1959) arguments established the wide reach of their combination. Sen (1999) considers freedoms important for the development process for two distinctive reasons. Firstly, these help to evaluate the needs of the people. Sometimes the lack of substantive freedoms relates directly to economic poverty, which constrains people in their freedom to satisfy hunger, to achieve sufficient nutrition, to obtain remedies for treatable illnesses, or to be adequately clothed or sheltered. Secondly, freedom makes development effective. Economic opportunities, political liberties, social inclusion, and quality of life are positively influenced in a democratic environment (Sen, 1999).

Summing up, there is no unexpected contradiction in the overall research hypothesis and econometric results in this study that link conflict to multiple public policy shortcomings in the economic development process. Violent conflict is found to have strong roots in contemporary factors, such as poverty and lack of democratic rights. This study observed the handicaps associated with accurate data availability for some variables like unemployment data, for a cross-country analysis. Further, this chapter establishes that it matters how we classify conflicts. It gives varying strength to the explanatory variables. Health infrastructure matters more than educational opportunities in countries with low to high intensity crisis, while minimum educational attainment negatively links with conflicts in countries with wars. This finding is contrary to some research on terrorism, which concludes education is a positive determinant of terrorist acts. Nevertheless, this chapter also explains that terrorism is both strongly linked to and can be different or isolated from civil wars. The all-encompassing gains of an unbiased and successful development process have strong potential to minimize the probability of conflicts, as mentioned earlier with regard to the post-WWII developmental progress in Western countries. Conflicts may occur sometimes in

democracies, but as the findings establish, lack of democracy has significant links with the onset of conflicts.

Analysis of the Muslim subset produces more or less similar results, but there are some exceptions of wider interest. The developmental index has significant value in decreasing the chances of conflict in Muslim majority countries. Moreover, corruption in model 7, contrary to the global sets, solely explains the occurrence of conflicts. High income decreases the conflict risk significantly in model 1 for both subsets. When income is combined with lack of political rights in model 4, although it has the expected sign, it is statistically not distinguishable from zero. Political rights are notably lacking in the Middle East and in Africa, and their denial creates violence-prone environments. The Muslim world has many dictatorships and kingdoms, some of which have been sustained for decades. For continuity of authoritarian rule they rely on some welfare initiatives, which they provide with the wealth obtained from natural resources. Nevertheless, there is another side: not every country under dictatorial rule is rich in resources. Navia and Zweifel (2003) find links between the type of regime and infant mortality rates, and quantitatively estimate that infant mortality rates are higher in dictatorships, as compared with democracies. Further, well-functioning democracies perform better in development indicators than countries under benevolent dictatorships. Sen (1999) explained that democracies tend to move to break the underdevelopment traps, as they invest more in social services than dictators do. The fundamental roots of violent conflict may lie here. In the vicious circle of poverty and deprivation, when voices remain unheard for long periods, hardly any other choice is left for the deprived than to be violent.

As mentioned earlier, every conflict is different, and so are the people involved in and affected by it. Therefore, the determinants and particularly the consequences can be different. The global analysis in this chapter for multiple sets of countries finds some distinctive results for each in explaining the determinants of conflict risks. The findings provide the motivation for this thesis for studying the effects of a particular conflict at the micro, household level. This thesis next will focus on the recent violent conflict which became civil war in Swat district of Pakistan

Chapter Three

Extremism and Emergence of the Taliban in Pakistan

3.1 Introduction

The Taliban in Pakistan, who interlink with Al-Qaeda and several other militant groups in neighbouring Afghanistan, forcefully occupied most of Swat district by early 2009. Hashim (2012) notes that during their occupation the Taliban enforced strict laws, killed opponents, changed the social environment, and gained almost complete administrative control. As a result there was a huge decline in economic and business activities in the district, and thousands lost their jobs. Within Swat, the Taliban were able to organize, recruit fighters, and subsequently effectively increase their influence in adjoining areas (Torwali, 2013), resulting in enormous repercussions on the short and long-term development prospects of the country, on its internal security, and on both regional and household economies.

Within this context, the remainder of this thesis is devoted to the analysis of the recent violent economic shock which became a civil war in Swat, and its impacts on households' livelihoods. This chapter provides a background description of the relevant aspects for this region-specific micro-conflict analysis. For example, the description of authoritarian military regimes, their reliance on religious ideology to prolong their rule and the resultant rise in radical thought is helpful in understanding the rise of religious radicalism in Pakistan. This chapter further explores other significant economic and social region-specific characteristics that resulted in the rise of religious militancy across Pakistan and particularly in Swat. These interconnected factors were not explored in any single earlier research study on militancy in Swat. The description of economic and social characteristics of militant-dominated areas (including Swat), which are different from other regions of the country, will broaden the understanding of militancy, and the Taliban occupation. Qualitative and some quantitative aspects of the damage that the Taliban occupation caused to local households, the local economy, infrastructure and social environment are also summarized in this chapter.

The details provided and the conclusions reached in this chapter support the research in this thesis in multiple ways. The economic, political and social exclusion of the people in Swat contributed to support and recruitment for the Taliban. The discussion investigates how the Taliban achieved initial recruitments and later lost public sympathies in Swat. That understanding provides the basis for a later chapter (Chapter Seven) that explores possibilities for reviving post-conflict livelihoods in Swat, using dynamic simulation modelling. The field visits undertaken by the author for this research in Swat provided the opportunity to see the post-war damage in person. These visits helped to obtain various opinions about the military's role in maintaining post-war peace and the need for other sustainable solutions, and are the source of some of the details provided in this chapter. This directly acquired information is useful in providing concrete explanations of the different quantitative and econometric results obtained in subsequent key chapters (Five, Six and Seven), of the thesis.

3.2 Key Facts about Pakistan

Pakistan's 67-year history is a mix of authoritarian military rulers, wars and civil unrest. It has had four military rulers, and the same number of major wars with neighbouring India. It remained involved in a long proxy²² war with Afghanistan, and had many intrastate conflicts, in which government forces acted against civilian insurgencies. Other than the on-going intrastate conflict with the Taliban forces, there is another civil insurgency in the south-western province of Balochistan, where state institutions are at war with secessionist organizations.²³

Pakistan is located at the junction of South, Central and West Asia, and borders Afghanistan, India, China and Iran. Table 3.1 presents some of the economic development and demographic indicators of Pakistan. Pakistan is the sixth most populous country and second largest after Indonesia in the Muslim world. The Human Development Index (HDI) ranking of 146 lists it among the countries with the lowest human development records. The adult literacy rate of about 55 percent

²² A war instigated by a major power which does not directly involve itself. These use third parties as substitutes to fight for their goal.

²³ Baloch nationalists organized in different groups are fighting against the government.

in Pakistan is below that of less developed and war-torn African countries like Sudan and Rwanda.²⁴

Table 3.1: Significant Economic and Development Indicators of Pakistan

<i>Indicators</i>		
Population	179.2	Million
GDP current US \$	231.2	Billion - 2012
GDP per capita	2,424	PPP US \$ - 2005
Export of goods and services*	14	Percent of GDP
Human Development Index (HDI) Rank	146	
Under 5 mortality rate	87	(Per 1000 live births) 2009
Adult literacy rate	54.9	Percent
Population below the poverty line	21	\$ 1.25 PPP - Percent

*Major exports are cotton and textiles

Source: Human Development Report, 2013, Asia Pacific Human Development Report 2012 & World Bank indicators

The horizontal or regional indicators of development are more uneven than the national averages. For example in Khyber Pakhtunkhwa (KP) (formerly called North West Frontier province), whose district is Swat, agricultural farm holdings are very small, and the proportion of farms less than one acre is 45.5 percent of the whole country total (KP, Government, 2013). The same source notes that there is one doctor per 1225 persons in Pakistan on average, while for KP there is one doctor per 6221 persons. Similarly, the gross primary enrolment rate and literacy ratio in KP are far less than the average national statistics.

Pakistan gained independence from British colonial rule in August 1947, largely because of a Muslim rights movement spearheaded by Muhammad Ali Jinnah.²⁵ The new states of Pakistan and India were formed from United India. The initial scarcity of resources and the burden of refugee settlement from India into West Pakistan forced early rulers to seek western aid from the beginning. Internationally the old colonial patterns were breaking down, and the US (post-World War II superpower), was looking for allies in its cold war against the USSR. The US–Pakistan alliance suited both parties well. The US got a strategically located ally, and it brought much-needed financial aid to Pakistan. From the beginning, keeping a large defence establishment²⁶ with a high defence

²⁴ Sudan and Rwanda respectively have 70 and 71 percent adult literacy rates (HDR, 2012)

²⁵ M.A. Jinnah, called *Qaid-e-Azam* (the biggest leader) was the founding leader of the country, and a staunch democrat throughout his political career

²⁶ The military remained involved in an arms race with neighboring India, even to the extent that Pakistan became a nuclear power. The military not only consumed financial resources but its role

expenditure and a strong state apparatus became the key objectives of the Pakistani state (Siddiq, 2007).

Other than the military, the big landlords who owned most of the agricultural holdings were also the beneficiaries of resource distribution and of different policies, as growth focused on facilitating the agricultural economy. These policies naturally resulted in uneven income distribution across different regions.

Different ethnic groups co-exist in Pakistan, and often have economic grievances against each other.²⁷ Instead of genuine redress of the issues they raised, religion was highlighted as a collective identity to create a nationalist outlook, ignoring geographical and cultural identities, and their grievances. Moreover, religion became a slogan to help satisfy the complaints of diverse ethnic groups, particularly about uneven economic development in different provinces. It was stressed that Pakistan was founded as an Islamic ideological state. This approach automatically brought religious parties to the centre stage of politics, and increased their influence on the social system (Khan, 2005)

3.2.1 Military Interventions and Dictatorships

In 1958, only 11 years after Pakistan's independence, the military was strong and politically influential enough to stage a coup, and assume direct power. Pakistan had its first major war²⁸ with India in 1965 during military rule. The second military rule immediately followed the first and lasted from 1968-1970. Ayub Khan (the first military dictator), had to surrender after a country-wide political movement initiated by students and political activists alike, against his government's authoritarianism, the economic hardship imposed, and in a quest for democratic rights. Public sentiment subsequently forced General Yahya Khan (the second military ruler), to hold the first parliamentary elections in Pakistan in 1970.

Political parties with developmental and democratic orientations won the majority of the seats. The military remained reluctant to transfer power until Bangladesh

expanded to build an economic entity too. The military's five allied giant welfare foundations run thousands of businesses including huge industrial establishments.

²⁷ The break-up of East Pakistan in 1971 (now Bangladesh) is one major example.

²⁸ In 1948, the first interstate conflict was started in Kashmir, which both countries call disputed territory: the scale of this war was confined to Kashmir areas

got independence after the 1971 Indo-Pak war.²⁹ The military directly intervened to curb political insurgency, which was demanding transfer of power in the former East Pakistan. This unfortunately had huge repercussions for the civilian population. The reaction to the military's intervention not only transformed the resistance movement into a war of liberation, but also caused hundreds of thousands of civilian deaths. Rizvi (2000) observes it also caused genocide by the military, and displacement of several million people. Huge damage to property and infrastructure occurred. In addition, the military used civilian armed groups, including *Islami Jamiat Talaba* (Islamic Gathering of Students), the student wing of the political party *Jamaat-e-Islami* (Islamic Party) in the civil war against the nationalist *Awami* League (People's League) to curb its activists and supporters (Khan, 2005). This was the first major reliance by the state on religious groups and parties for political policy objectives, which proved costly later. The involvement of public policies with religion in setting state priorities and policies will inform the concluding sections of Chapter Seven, which explain the various motivations for recruitment to militant religious organisations.

A geographically broken Pakistan started its first period of democracy and a civilian interlude that continued until 1977. General Zia-ul-Haq seized direct control by imposing martial law in July 1977. He instantly allied with ultra-right parties to gain some legitimacy for his rule. The parties with which he allied were vocal against the socialist slogans of the overthrown Zulfikar Ali Bhutto's regime.³⁰ These rightist groups historically had limited voter support and declaring the democratic electoral process un-Islamic was very expedient for them (Ahmad, 1983). General Zia turned out to be the most suppressive ruler, and his dictatorship lasted for 11 years (1977-1988). His era, as Nancy Hayden (2005) has described it, was an 'epochal' stage³¹ in the evolution of religious radicalism in Pakistan.

²⁹ India directly intervened on the pretext of stopping civil war in neighboring East Pakistan (Bangladesh)

³⁰ Most socialist ideals were during his initial years of power: later he even enforced legislation to satisfy the demands of Islamic radicals.

³¹ Nancy Hayden used the phrase 'epochal evolution' to describe the phase of rapid progress in the evolutionary process of the terrorist organizations.

Pervez Hoodbhoy, an eminent Pakistani scientist and writer, explains that the process of incorporating religious immoderation (which is still on-going), was widely initiated after General Zia took power. This process involves profound efforts to culturally split Pakistan from the Indian subcontinent and drive it towards the Arabian Peninsula. For this to happen, a severe version of Islam, the *Salafi/Wahabism*³² of Arabian lands and *Deobandism*³³ of South Asia, is replacing the kinder, gentler and more loving Islam of the Sufis and saints who had inhabited the area for hundreds of years (Hoodbhoy, 2011).

Islam remained a state religion since the inception of Pakistan but was not visualised or enforced in the stricter ways which General Zia pursued. There were public floggings for minor crimes. Those who did not fast in *Ramadan* (the month of fasting) were punished, and *jihad* (holy war, literally meaning “effort” in Arabic) was declared mandatory for every Muslim. Hoodbhoy (2011) identifies Pakistan’s sufferings of today as mostly self-inflicted, originating from an education system (transformed during Zia’s regime), that like Saudi Arabia’s system, provides an ideological foundation for future jihadists and violence. Hiro (2012, p. 160) observes that revisions of the curriculum were done at the expense of historical facts. Rizvi (2000), explaining the governance concept of General Zia, notes that a self-created form of governance was introduced.³⁴ General Zia declared himself accountable only to God and unchallengeable in an Islamic state. Interest-free banking was initiated and *zakat* (a compulsory tax) on bank accounts was promulgated. His allied Islamic religious parties were encouraged to launch an ideological onslaught on the existing electoral systems, human rights, and freedom.

³² Salafi is the term for Muslims used since the middle ages: today it relates to Salafiya including Wahabis. It is strict and puritanical; it also considers Jihad against civilians a legitimate expression of Islam.

³³ This sect originated in colonial India in late 19th century. Their major beliefs are that Muslims should have their own style of learning, madrassas (religious seminaries). They oppose all kind of shrines, and take a very restrictive view of women in Islam. To them national boundaries are not acceptable and religious frontiers are acceptable. They believe that Muslims have a sacred right and duty to go to any country and wage Jihad to protect Muslims.

³⁴ He was elected President after a controversial referendum. *Majlis-e-Shoora* (the Islamic parliament or group of advisors), with unelected members, formed the parliament, and national assembly elections were conducted on a non-party basis in 1985.

3.2.2 The Proxy Afghan War

The Russian invasion of Afghanistan and the Iranian revolution in 1979 changed the regional strategic environment. It brought a lot of Western, particularly US, interests into the region. Marwat (2005) notes that General Zia decided Pakistan would become the frontline state of resistance against the Russians in Afghanistan. This resistance was backed mainly by the US. Pakistan was experiencing a difficult economic situation, and there was international isolation, particularly after the Carter administration's sanctions in 1978.³⁵ The major stakeholders in the civil war in Afghanistan promised economic and military assistance to Pakistan, in return for its active cooperation in the Afghan resistance. Western countries who opposed the Russian invasion were led by the US along with the oil-rich Gulf countries. The Gulf countries' leadership for militant resistance to the Russians lay in Saudi Arabia, who believed it to be jihad.³⁶ Moreover, this cooperation favoured General Zia: he was no longer asked internationally to revive democratic processes in his country.

It is well known that the Afghan *mujahedeen* (people doing jihad) resistance against the Russian invasion was foreign funded (by the US, the Saudis and other Gulf states),³⁷ and was facilitated in many ways by the Pakistan army (Rashid, 2008).³⁸ This formed a Washington-Riyadh-Islamabad nexus for years to come, for a unified cause and struggle, in pushing back Russia from Afghanistan.

³⁵ Economic and military aid was suspended by the US because of the ongoing nuclear programme in Pakistan.

³⁶ Jihad is explained briefly in the previous chapter; literally it means struggle or effort. In religious terms it is the duty of Muslims to fight against those who do not believe in Allah. Different Muslim sects have different interpretations of this concept. Some moderates believe that internal jihad, meaning the spiritual struggle for a righteous living, is a better form than the external physical concept. Some Muslim scholars call it a struggle for a just moral and social order. President Habib of Tunisia used the word as a struggle for economic development of his country.

³⁷ Hillary Clinton, former U.S secretary of state publicly acknowledged that the US and Saudi Arabia funded Islamic militants and their Wahhabi brand of Islam for fighting against the Russians in Afghanistan and supported the Inter-Services Intelligence (ISI) of Pakistan. Retrieved from http://www.dailymotion.com/video/x13046f_hillary-clinton-speaks-out-about-us-links-with-taliban-and-others_news

³⁸ The Pakistan army trained mujahedeen, funded them, stored and distributed arms and ammunition which were supplied by other stakeholders. Most of its operations were covert so specific details are difficult to obtain.

The civil war in Afghanistan made the neighbouring Pakistan, host to millions of Afghan refugees. By 1990, as Marwat (2005) notes, the number of registered refugees was 3.2 million, with approximately another 0.5 million unregistered.³⁹ He further comments that the refugee camps soon became more than a place of shelter, and that learning of jihadi concepts and military training of mujahedeen started in these camps. Among the international organizations providing relief efforts were Middle Eastern organisations, some of which promulgated very strict interpretations of Islam among refugees, particularly the young. To encourage militancy, a special curriculum was taught in schools for refugee children, aimed at raising their motivation and sense of ‘duty’ for militant actions and jihad. Books and ideological material were distributed free of charge. Ultimately, jihadi ideas penetrated to different parts of tribal areas in Pakistan, crossing into neighbouring Afghanistan. For resistance against the Russians, more than weapons were supplied by the U.S. An investigative report in The New York Times by Stephens and Ottaway (2002) revealed that the U.S spent millions of dollars to supply Afghan schoolchildren with textbooks filled with militant Islamic teachings.⁴⁰ These supplies were part of covert attempts to encourage more resistance to the Soviet occupation. Apart from jihadi lessons, these books as part of the school system’s core curriculum included abundant drawings of guns, bullets, soldiers, and mines. Figure 3.1 is a page from one of those books, and is self-explanatory.

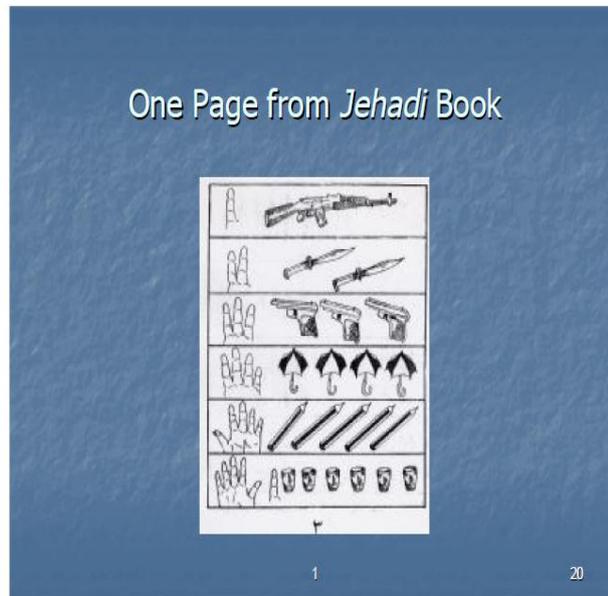
When jihadi ideas were being spread in Afghanistan and the tribal areas of Pakistan, as Zaidi (2008) observes, little or no thought was given to their after-effects. This included religious radicalization of tribal people, which through different militant groups started spreading radical ideas across Pakistan. The Soviet Union started withdrawing from Afghanistan in 1988, so American interests also waned. General Zia died as his plane exploded mid-air during the same year. However, his followers in the military and allied intelligence organisations continued to support the radical Islamic militants, this time for another ‘holy cause’: to fight against India in Kashmir (Khan, 2005). Such

³⁹ Currently, as of June 2013, there are 1.6 million registered and about 0.6 million unregistered Afghan refugees in Pakistan. This is after repatriation efforts to return refugees to Afghanistan (United Nations Commission for Refugees, UNHCR)

⁴⁰ It was titled “The ABC’s of Jihad in Afghanistan”: Courtesy USA.

interventionist policies ultimately resulted in complex multiple outcomes, some of which are discussed next.

Figure 3.1



Source: Marwat (2005)

3.3 Emergence of the Taliban

The Taliban had initially been students of *madrassas* (religious seminaries), in the KP and Balochistan provinces of Pakistan; many of them were born in the Afghan refugee camps. The name *talib* means an Islamic student who seeks knowledge. *Mullah* (religious preacher) on the other hand, is one who delivers Islamic education. By choosing the name Taliban (plural of talib) they distanced themselves from the politics of the mujahedeen (most of their leadership was from Mullahs), and the war lords in Afghanistan. They further conveyed that they were running a movement for spreading virtue in society, rather than running for power (Rashid, 2002). The Taliban movement came to prominence in 1994. At that time Afghanistan had disintegrated and was witnessing a civil war between warlords and various ethnic groups. The Taliban's first military endeavour was the support of Mullah Omar in conquering Kandhar province. In the next few years they conquered most of Afghanistan.⁴¹

⁴¹ Pakistan and Saudi Arabia were the only two states who recognized the legitimacy of the Taliban government in Kabul.

The madrassas in Pakistan (later the main recruitment points) increased greatly during General Zia's rule. They were run and encouraged by Islamic fundamentalist parties and were generously funded, both locally and from affluent Middle Eastern countries. Maulana Fazlur Rehman and his *Jamiat-e-Ulema Islam* (JUI), the religious and political party with Deobandi faith, controlled most of these. By 1971, there were 900 such religious schools in Pakistan. However, at the end of General Zia's rule there were 8,000 registered madrassas and 25,000 unregistered ones across Pakistan (Rashid, 2001). Here, young Pakistanis and Afghans were provided free food, shelter, education, and military training. These young, mostly Pashtun⁴² warriors and madrassa students had no idea about mathematics or other sciences, history or new branches of knowledge. They studied only Islam as interpreted by their madrassa-qualified teachers. Much of their faith was based on a code of centuries-old tribal customs called *pashtunwali*, and was reinforced by learning in Deobandi madrassas. They were mostly the orphans of the Afghan war, who while living in refugee camps had no roots or identity, were jobless and economically deprived (Rashid, 2001).

The spread and impact of these ideologically orientated and militant students was not confined to Afghanistan; Pakistan started becoming a target of increasing religious radicalism too. Hoodbhoy (2011) notes that the madrassas deeply influenced the big cities and their civic environment. For example until a few years ago, Islamabad, the Pakistani capital was a quiet, orderly and modern city, an abode of affluent people and foreign diplomats. Now, it has scores of madrassas among which 30 are unregistered and illegally constructed.⁴³ However, in big cities the presence of militants is not as visible and dominant compared to the border areas of Pakistan with Afghanistan, where they openly interfere in the economy and in social matters. Some relevant details about the border areas, which are the major initial and current abode of the Taliban and their allied militants, are given next.

⁴² An ethnic population which is in the majority in Khyber Pakhtunkhwa province of Pakistan: it also has a sizeable presence in Balochistan.

⁴³ This number was provided by the interior minister, while answering a question in the parliament of Pakistan. Retrieved from <http://www.dawn.com/news/1073802/islamabad-has-30-unregistered-seminaries-na-told>

3.4 Geography, Economic and Governance Structure: Militant Dominated Areas

The border between Pakistan and Afghanistan is 2640 kilometres long; much of it is so remote and mountainous that it is virtually inaccessible. It consists of narrow valleys, desert plains and barren wastelands. Militants, not only the Taliban, but also from other countries find it safe to live and regroup in the border areas. The North Atlantic Treaty Organisation (NATO)-led International Security Assistance Forces (ISAF) directly intervened in Afghanistan, to dismantle Al Qaeda and remove the Taliban government from power, in early 2002. Subsequently, thousands of the Taliban fighters and their senior leadership *Shura* (religious council) found sanctuary in Pakistan's adjoining Federally Administrated Tribal Areas (FATA), Khyber Pakhtunkhwa as well as in the Balochistan province (see Figure 3.2). The Pashtun ethnic group has an overwhelming majority in most of these areas of Pakistan (Johnson & Mason, 2007).

Figure 3.2: Pakistan-Afghanistan Border and the Pashtun Majority Areas



Source: Johnson and Mason, 2007 – p. 4

The region's trading routes and passes have connected Central and West Asia to South Asia for many millennia. The political and legal structure of the region started to assume its contemporary structure in the early nineteenth century, when the British East India Company was expanding toward northwest India. Pakistan and Afghanistan inherited their border (the Durand Line), and the complex governance structure of the border areas from the British Empire's Frontier Crimes Regulation (FCR).⁴⁴

3.4.1 Political and Economic Facts about FATA

Constitutionally the President of Pakistan rules FATA through the governor of the province. The provincial government has complete responsibility for the development and provision of basic services like health and education. FATA has no representation in the provincial assembly. The real administrative authority in FATA is the political agent, a representative of the federal government. Rubin and Siddique (2006) note that the political agent has absolute powers ranging from revenue collection to the implementation of development schemes and the hearing of civil and criminal cases, and can award judgements and punishments, which have no right of appeal. In August 2011, the government of FATA introduced its first reforms in 100 years. These included extensions of the Political Parties Act in the area that allowed candidates to contest the elections on a party basis. Earlier they contested independently and could not join any mainstream political party. In addition, for the first time convicts were given the right to appeal.

The economic situation in the border areas is worse than in other regions of Pakistan. The civil war in Afghanistan and now in Pakistan has spanned more than three decades and has transformed the economy of these areas. Once based on subsistence agriculture, the economy has turned to largely unregulated cross-border trading of goods, including drugs and arms. The overall literacy rate of 17% in the tribal region of Pakistan is the lowest, at 29.4% for men and about 3% for women. Only 102 colleges (equivalent to western high schools) exist in the area (Government of FATA, 2013). The strong religious leanings, limited available formal education opportunities and low income reinforce demand for

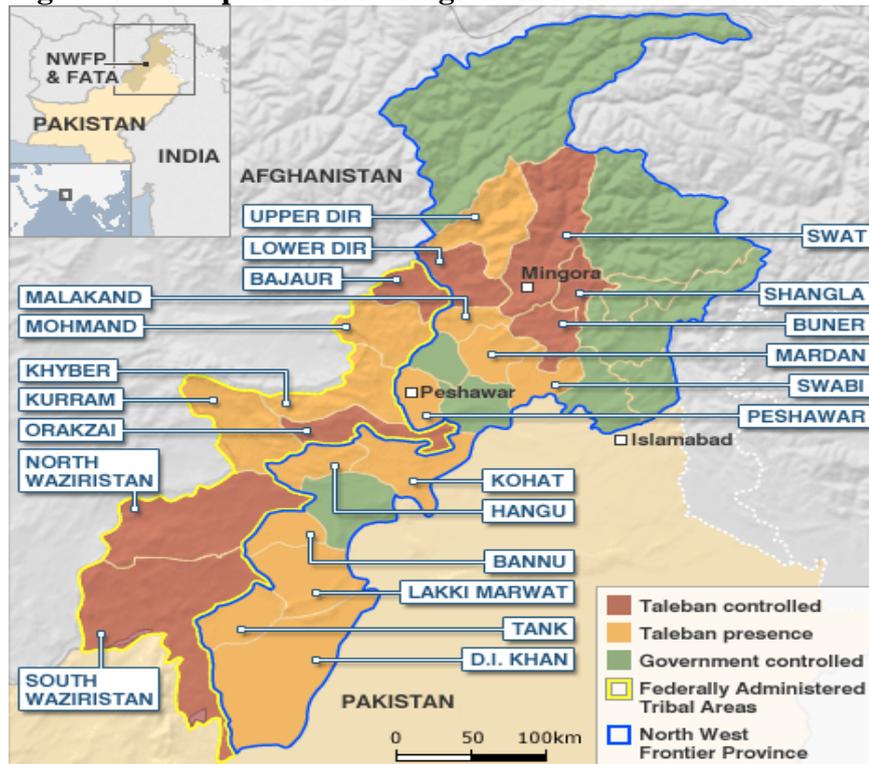
⁴⁴ Frontier Crimes Regulations were promulgated as statutory law under the British viceroy Lord Curzon in 1901.

enrolment in and growth of madrassas. Slightly more than 500 doctors operate in the area, a level of one doctor for more than 7,500 people: some areas do not have any kind of health infrastructure. Infant and maternal mortality rates are continuing to worsen (Yusufzai, 2008). Since 2001, health and education facilities have further deteriorated, doctors are not willing to work in the region, and schools remain consistent targets of the Taliban. The per capita annual income is half than that of the country's already low average of about US\$2,400. No aid agencies or non-governmental organizations (NGO) can work in the region, as the legislative structure does not allow for this. Development indicators for the area are hard to estimate as coverage of national surveys is limited in the militant-dominated region. The unemployment rate averages 60 to 80 percent (ANP, 2008).

The large influx of militants from Afghanistan eventually resulted in their gaining control of the region. Their control resulted in widespread assassinations, terrorist attacks, and severe fighting with government forces, which made the border areas more radicalised and troubled, and the population more vulnerable (Revill, 2007). The military attempted to regain control, but this only resulted in a lot of casualties, including civilians. The military later followed the policy of making 'peace deals' with militants, but those deals did not last long. It was in FATA that, as Zaidi (2008) observes, Islamic militants strengthened themselves, re-organized and took fresh recruitments directly, and from the madrassas. This new militia of the Taliban under the influence of Al Qaeda includes militants of different nationalities. The *Tehrik-e-Taliban Pakistan* (Movement of the Pakistani Taliban) or TTP was formed in December 2007. It soon started spreading outside FATA.

Figure 3.3 next shows the Taliban dominated and captured areas in early 2009.

Figure 3.3: Map of Conflict Regions in Pakistan



Source: bbc.co.uk from www.swatvalley.com.pk

3.5 Swat Valley and the Taliban

Swat was a renowned tourist-friendly northern mountainous region. By early 2009, Swat was turned into a Sharia (the Islamic system of governance) state in Pakistan based on the Taliban’s model of governance (Hiro, 2012). The district headquarters of Swat is Saidu Sharif, which lies 260 kilometres north of Islamabad. Mingora, the twin city of Saidu Sharif, is the biggest urban hub and centre for trading, social and cultural activities. The total area of Swat district is 5,337 square kilometres and its estimated population in 2010 was 1.8 million. Around 15 percent of its population lives in urban areas, while the majority 85 percent rural population is involved in agriculture (mostly orchard farming), mining, tourism-related activities and forestry (KP-Government, 2013).

It was in early 2006 that news reports such as that of Hasan (2006) claimed that Al Qaeda and its leadership had established their operational headquarters either in Dir district or in upper Swat.⁴⁵ In the following months the *Tehrik-e-Nifaze*

⁴⁵ Kumar (2007) writes that these news reports were published in both the American and Pakistani press.

Shariat-e-Muhammadi (TNSM)⁴⁶ meaning ‘the movement for enforcement of the law of Prophet Muhammad’ started asserting its influence with multiple activities in the valley. TNSM remains a close ally of the TTP and includes its many trained fighters in their ranks, planning and operating jointly (Zaidi, 2008). Its leadership adopted a novel strategy for radical preaching. They utilized FM radio stations in inciting people to revolt against the current governance system, which they termed ‘un-Islamic,’ and to establish an Islamic state. Up to 30 radio channels backed the jihadi teachings and anti-government ideas. The TNSM leadership had other goals to pursue than religious preaching, including gaining complete control of the district. They therefore started a campaign to wipe out dissent, alongside other militant activities, which included recruitment of local people and militant training. Their activities extended to armed attacks on business locations and blowing up infrastructure like power supplies, bridges, government offices, and female educational institutions (declaring them un-Islamic).

Military forces repeatedly intervened to remove them and to restore order, but with no success. These military missions resulted in some agreements in which the government agreed to enforce sharia while the Taliban made commitments to conditions such as ending suicide bombings and attacks, and cooperating with efforts to restore peace and order in the region. However, these agreements did not last long, as the militants did not close their training centres, and activities including damage to lives, property and infrastructure continued.

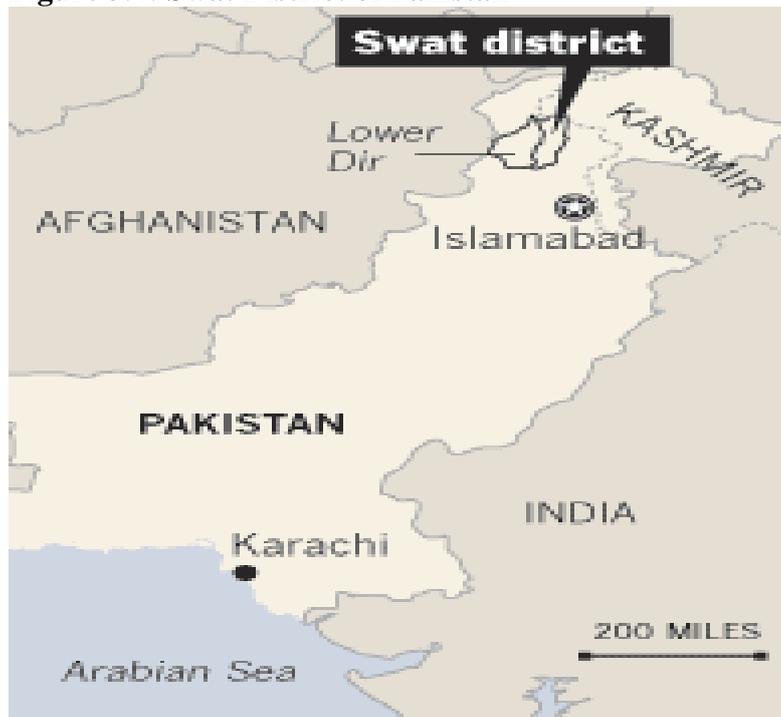
3.5.1 Background of the Taliban Occupation

Swat has a history that dates back more than 2,000 years. Due to its location, it was a stopping point for many invaders of South Asia, coming from Central Asia. It was a centre of Buddhism in 8th century. Modern Swat remained a princely state, which was recognized by the British in 1926. After the independence of Pakistan, it remained a part of Pakistan. However, its rulers, called *Wali* (heirs), had considerable autonomy. It was merged with Pakistan in 1969, and was then ruled under Provincially Administered Tribal Areas (PATA) regulations. In 1994

⁴⁶ TNSM was created in the early 1990s to implement Sharia. Following the 9/11 attacks its activities were banned in Pakistan. Its leadership, along with 5,000 to 10,000 fighters crossed into Afghanistan. Sheikh (2009) notes that they fought alongside the Taliban against the US-led coalition.

the supreme court of Pakistan declared the PATA regulations *ultra vires* to the constitution. This decision took powers from local influential landlords known as *Khans*, and thus created a legal and administrative vacuum, which government could not adequately fill with its own civil and legal structure.

Figure 3.4: Swat District of Pakistan



Source: ESRI

Associated Press

Source: <http://www.latimes.com>

PATA regulations were unable to deal with the changing social, political, and economic dialectics of the region. Hussain (2007) observes that these regulations were authoritative and favoured the local elite by totally ignoring the changing socio-economic structure of the society. Looking at the causes of the Taliban's occupation, Khan (2009) argues that society in Swat is visibly divided on an ethnic and class basis. There are political and social gaps between the landowners and the newly emerging middle class. Anthropologist Fredric Barth (1959) who studied the area for his Ph.D dissertation writes, "Swat is deeply divided between

elite groups and common people”.⁴⁷ Many landless people in recent years migrated to other parts of the country or to the Middle East for better income, but even with increased incomes the social divisions and exclusion remained embedded in the system. In addition, complexities in legal disputes were aggravated by an inefficient judicial system. The judicial system overall in Pakistan is lethargic, particularly in civil matters. Provision of speedy justice (according to sharia) for civil and criminal matters was among the first slogans used by the TNSM. The Islamic movement promised to end the dominance of big landlords, and offered sharia law as an answer to public grievances and particularly as a speedy solution to land disputes.

3.6 The Taliban’s Rule in Swat

When TNSM began its militant presence in Swat, the provincial government was with JUI,⁴⁸ which was a close ally of General Musharraf, the then ruling military dictator. Revill (2007) notes that the leadership of the province remained fully sympathetic to the Taliban and their efforts to introduce their version of Islamic Shariah law in the region. From 2007 onwards, however, the federal government rejected many demands of the militants, such as TNSM’s call for banning polio vaccination for children, which it considered un-Islamic. However, it was increasingly evident that the government’s authority had weakened. The Taliban were succeeding in enforcing their rule in Swat district and adjoining areas.

Khan (2009) identifies that the Taliban advanced by engineering a class revolt for the landless or small landholders, and for people seeking justice in a painfully slow justice system. The militants organized these people into armed groups that became their troops (Perlez & Shah, 2009). The Taliban initially pushed out a few big landlords in upper Swat (Matta area) and seized control of their lands.⁴⁹ They targeted the uneducated in remote villages for recruitment, who were mostly

⁴⁷ Barth’s (1959) thesis is titled ‘Political leadership among Swat Pathans.’ Some excerpts from his thesis are referred to in a blog, *How can Anthropology help us understand Swat and the Taliban*, Retrieved from <http://www.antropologi.info/blog/anthropology/2009/how-can-anthropology-help-us-understand-swat-and-taliban>

⁴⁸ JUI was in tacit alliance with General Musharraf, not only at the provincial level but also at national level. It was the official opposition party to the Musharraf-backed ruling party but for its support at central level, it had full command and authority in KP province.

⁴⁹ Known as Khans and are the most privileged landlords under the land settlement plans and PATA regulations in Swat.

unable to differentiate between the religious teachings of the Taliban and the militancy associated with the practical implementation of their version of Sharia (Farooq & Ziad, 2011). The slogans of quick justice and efficient Islamic governance initially got support from the people. In response to the leadership's calls for funds, people responded generously and even sold their belongings. Women sold their precious ornaments to fund construction and running of madrassas, and the Islamic movement of the Taliban (Khan, 2009). As the Taliban insurgency gained momentum, the movement became more radicalised. Women's education, music, movies and internet became taboo under the new open-ended sharia and leadership. They burned music and barber shops (cutting hair fashionably and shaving beards was termed un-Islamic). The Taliban later bombed or burnt female educational institutions. Hundreds of schools became their target and were destroyed. In their justice system, petty crimes like theft were awarded capital punishment. Political opponents, security personals, and independent journalists were killed and executed by beheading (the kind of execution otherwise only performed in Saudi Arabia). Taliban hanged the decapitated bodies in the main city centres (Torwali, 2009). In addition, the physical infrastructure was targeted; bridges, telecommunications, power supplies and government buildings were destroyed.

Household economic activities and assets were much affected. Orchards, the key to Swat's agriculture, were damaged and houses suspected to have been serving as safe havens to opponents were demolished. Other than orchard farming, Swat's economy relies heavily on tourism, which came to a complete halt. Businesses related to tourism suffered severely, and this had implications for livelihoods. Many businesses such as hotels, restaurants and thousands of different kinds of shops were completely closed. During field visits and discussions for this study, I was informed that those who stayed in business not only had income losses, but jobs were curtailed, and wages decreased. The resulting civil war and displacement resulted in even more damage to household and local economies, and in negative repercussions for sustainable livelihoods. The quantitative description of such losses, based on field studies conducted in post-war Swat, is provided in later chapters.

As the initial promises of equity and justice failed to materialize, and the system the Taliban introduced received little recognition, they started losing public sympathy and support. Meanwhile, the government in Pakistan changed, through democratically held elections in February 2008. Shortly before the election, the Pakistan People's Party (PPP), which won the elections, lost its chairperson and twice elected Prime Minister of Pakistan, Benazir Bhutto, in a suicide and shooting attack in December 2007. Media across the country announced that the TTP had accepted responsibility for the attack. In May 2009, the army intervened, and a full-scale civil war started between the Taliban and the military forces. It resulted in the biggest internal displacement of the population in recent history. The Asian Development Bank (ADB) and the World Bank (2009) estimated that more than 140,000 families were displaced from Swat district.

After the civil war, the Taliban retreated and fled Swat. The district is now controlled by a civilian administration with active support from the military. This post-conflict era is the setting of my study into the livelihoods of conflict-affected households. Since there is now more stability and livelihood options may be expanding, studying livelihoods in this context is expected to make a useful contribution to the post-conflict literature.

3.7 Post-War Swat

The years of turbulence and later severe rains and floods in 2010 had a devastating impact on the physical infrastructure in Swat. During various visits by the author for the sake of this research, the first in October 2010, the renowned tourist resort of Swat was in a devastated condition. The signs of destruction were quite visible. The road network was severely damaged, and bridges that were a major physical and communication link between many towns were either partially damaged, or destroyed. The presence of more than 30,000 military troops had altered normal lives after even the retreat of the Taliban from Swat (Duparq, 2011). Their presence was different from living in military cantonments. It was on the streets, and in markets, searching villages for the Taliban and sometimes in armed combat with suspected militants. Vigilant military check posts were present at the entry points of all towns. The military personnel questioned individuals crossing these borders, both pedestrians and those in vehicles, about their origin

and destination. This practice increased normal travelling time significantly. There were hardly any signs of normal life or activities after sunset. Such an environment in the longer term may not be very conducive for the revival of tourism and related businesses in Swat. The local people have clear ideas about this and they talked about the need for solutions, which exclude heavy military involvement in their daily lives. With these background facts, this thesis will, in Chapter Seven, concentrate on the possibilities for improvement in livelihoods in Swat, focussing on the largest pre-war economic sectors, agriculture and tourism.

Military units have worked for the restoration of schools, and have built bridges and roads. The government finances the bulk of the reconstruction work, while some international donors have also contributed. During the author's discussions with locals some people acknowledged the military's post-war contribution, however they did not approve of their methods and expressed regret that military troops did not listen to people's viewpoints at checkpoints or during searches. There was a general complaint that military check points do not relax procedures even for travelling children or in medical emergencies. These steps may be essential from a security viewpoint, but are in contrast to the democratic freedom and rights which will be discussed in the last chapter of the thesis that sums up major conclusions.

3.8 Conclusions

The historical role of the Pakistan army has been questionable in upholding the Constitution and democratic institutions in the country. There are also logical questions about their involvement in nurturing religious extremism for getting direct or indirect institutional benefits at the cost of other realities and future directions. The extent of the strength and threat of the Taliban in Swat, however, could only be controlled by strong intervention by security forces and their commitment to sustain post-war peace. The post-war era has seen many public commitments by the army leadership to uphold democracy, and to the fight against the spreading threat of militancy and terrorism. That has so far taken more than 50,000 lives in Pakistan. It has shaken its developmental and economic priorities, created panic across the country and resulted in the loss of international

confidence and trust in the country's potential as a dynamic and progressive nation overall.

Inside Swat, people have mixed reactions to the army's continued presence and activities. The perception as observed during the field visits is that it is far from a permanent solution to terrorism and militant thoughts. Further, it will not be tactically or financially possible to keep such a large field presence of troops over a long period. The presence of around 30,000 military personnel in the district has not been able to fully stop targeted incidents of terror and killing. October 2012's attack on schoolchild Malala Yousufzai⁵⁰ and her schoolmates is one such example. By presenting a diary on the BBC's website, she became the voice of all the girls who wanted to be educated during the Taliban rule and afterwards. Malala became a symbol of a new generation's resistance to the Taliban's open-ended sharia principles. She survived a struggle for her life after she was critically wounded when shot at point blank range on her way home from school. Other incidents of targeted attacks on members of *Aman* (peace) committees still take place in Swat.⁵¹

While Swat now is in much better shape than it was in the recent past, the scars that the war has left require concentrated analysis, and practical reconstruction and rehabilitation of households and people. A household analysis of post-conflict effects on assets and post-war sustainable livelihood choices constitutes the later chapters of my thesis. In addition, my simulation modelling aims to find possible revival strategies for improving household livelihoods. The next chapter discusses the details of the field survey undertaken in Swat to collect data on conflict-affected households. The subsequent chapters will analyse this data to obtain a deeper understating of these effects.

⁵⁰ She has been awarded Nobel Peace Prize for 2014, for her contributions for children's education (particularly female) not only in Swat, but throughout the world.

⁵¹ These committees have support from the government forces, to resist or help as much as they can against militants in their respective areas.

Chapter Four

Survey Design and Field Research Instruments

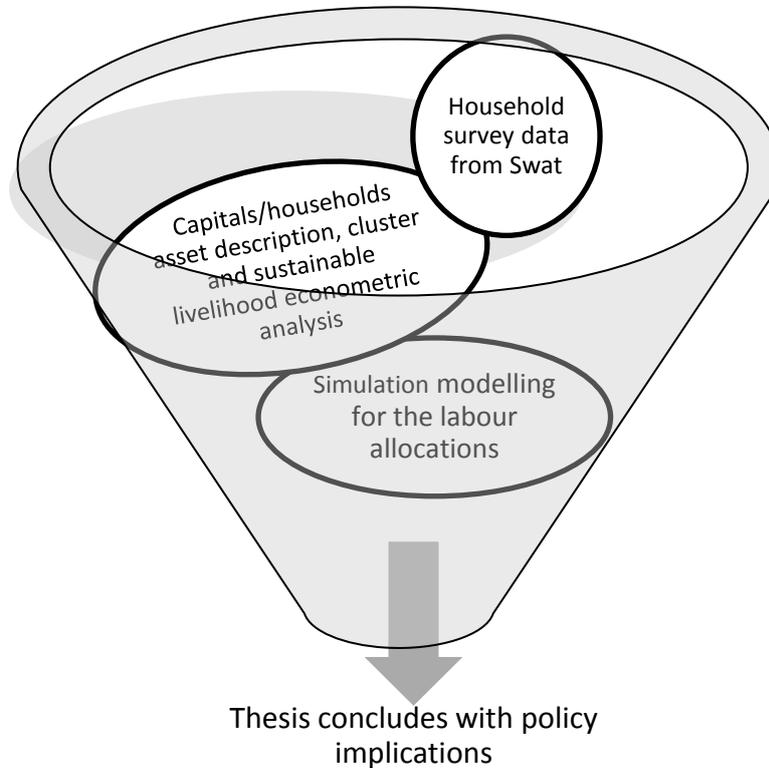
4.1 Introduction

The remaining key research questions of this thesis focus on war-affected household livelihoods in Swat, Pakistan. These research questions focus on livelihoods and include descriptions of household asset portfolios, empirical investigation of the role of assets in forming post-conflict livelihoods and determination of what positive interventions in Swat's economy may enhance post-conflict livelihoods. This analysis required collection of primary household data from Swat district. This chapter thus addresses the issues that relate to the field research conducted for household data collection in 2010 and 2011, in Swat district. It describes the significance of the household survey, which seeks quantitative and qualitative information, and also describes the direct benefits gained from primary household information. It discusses the design of the survey instrument for this study (the questionnaire) and its relevance to the remaining research questions of the thesis. Moreover, this chapter explains the selection of war-affected research sites in Swat. In addition, it describes field survey details, including the pilot study, and concludes with survey data entry, processing and quality control methods.

Figure 4.1 summarises the methodological steps followed in the remainder of this thesis, based on the household survey information. Household survey data will be used to describe the livelihood attributes of sample households. Later this data will also help in grouping these households into clusters with similar features. Household clusters will be econometrically analysed to determine how different capitals (human, financial, physical, social and natural), affect the adoption of various post-conflict livelihood strategies in Swat. Cluster and econometric analysis will identify livelihood groups for the simulation modelling in Chapter Seven. The variables for the model will be based on the survey data and on relevant findings from the livelihood analysis. The dynamic simulation model will attempt to explore the interactions between capitals and inter-sectoral labour allocations depending upon profits per worker in the major sectors of Swat's

economy. The thesis will conclude with overall conclusions and policy suggestions.

Figure 4.1- Household Survey Data from Swat: Links and Significance



4.2 The Field Survey Approach

The foundation of the field research undertaken, and of the research methods in the forthcoming analysis, lie in the sustainable livelihood framework (SLF) proposed by DFID (1999; 2000). The SLF refers to two main methods for exploring livelihoods; these include various participatory methods and sample surveys. Participatory methods have strengths in terms of gathering qualitative information, such as understanding the historical, social and environmental context of the livelihoods. The participatory approach consists of different methods including timelines, seasonal calendars, preference ranking, and wealth ranking. Sample surveys are useful particularly for the following reasons (DFID, 2000):

- These generate quantitative data on specific livelihood attributes (for household economic information, distribution of assets, livelihood strategies in a population and their outcomes over time, and access to services)
- Sample surveys make measurements relatively more precise by making uniform definitions about the participants
- Sample surveys are useful in describing the characteristics of large populations based on a small sample, and thus reduce costs and resource requirements impending

The next key research goals for this thesis require an understanding of the quantitative post-conflict effects on household assets and livelihoods in Swat. Household sample surveys were best suited to obtaining the information needed to meet my research objectives. Surveys facilitate the gathering of detailed household livelihood information in both quantitative and qualitative terms. A variety of indicators of human capital can be assessed with surveys, including economic participation, educational attainment and health status. These also help in getting data about natural assets, like land use, its degradation, forests, and the availability and use of water. Sample surveys are also a very effective method of assessing personal and household assets; items that enhance income, housing quality and available facilities are easier to evaluate. Access to productive physical capital, both private and public physical capital and personal consumption items (food and non-food) can also be easily identified in a survey. To gauge the availability of financial capital, its sources and usages, and individuals' savings behaviour, survey questions remain an effective source in gathering information from households. Income data may be influenced by the time of the year at which it is collected, particularly when the sample population is rural and relies on agricultural related income sources, which are usually seasonal. Consumption data is collected to enhance the reliability of income data and to make it more effective.

Despite their strengths, sample surveys are sometimes regarded as costly and slow. Asking questions about intra-household issues can be sensitive. However,

such issues can be better managed when trust is established between the enumerators and members of the community (DFID, 2000).

4.2.1 Income and Expenditure Survey-Based Research in Pakistan

Income and expenditure household surveys are a typical practice worldwide to investigate various aspects of income and poverty. A number of research studies in Pakistan and in the Khyber Pakhtunkhwa province (whose district is Swat), have been based on household survey data. This section briefly reviews some of these studies.

A large-scale income and expenditure survey, the Household Integrated Economic Survey (HIES) has been conducted since 1963 at irregular intervals by Pakistan's Federal Bureau of Statistics. It provides data on household income, consumption expenditure and patterns at national/provincial level with urban and rural breakdowns. Various researchers have used this data to examine the income-poverty relationship, and to understand their different dynamics. Naseem (1973) found that inequalities increased both in the Gini coefficients of expenditure as well as in income during 1971 and 1972. Burney and Khan (1991) examined household consumption patterns separately for rural and urban households. They observed that expenditure elasticity for different commodities varies with income; also behavioural differences exist in consumption patterns between urban and rural households. Haq (1998) used Sen's welfare index and observes that consumption increases without significant change in inequality among different income groups while disparities among groups are higher in non-food consumption expenditure. Studies like those of Kemal (1997) and Sayed and Sayyid (1999) observed poverty trends using data from HIES surveys over several years. Using the same data source, detailed work was carried out by the Mahbub ul Haq Human Development Centre (MHHDC) (1999) on poverty in Pakistan. The centre created a new indicator based on lack of education, health and income (poverty of opportunity). It estimates that half of the country's population is poor while women are the most deprived in all indicators.

To compare poverty with other data sources, Arif, Ali, Nasir and Arshad (1999) conducted a countrywide household survey under the project Micro Impacts of Macroeconomic Adjustment Policies (MIMAP). They generated data sets for

income and expenditure patterns, and for health, child mortality rates and nutritional status of the vulnerable population. About 1500 households, mostly rural, were surveyed for socio-economic characteristics including information about income, wages, assets, and household consumption.

A recent study by Nasir, Tariq and Rehman (2011) conducted in four cities of the Khyber Pakhtunkhwa analysed the impact of foreign remittances to households on the educational performance of their children. Shahbaz (2008) studied the meaning of vulnerability and risk in various contexts in the rural settings of Khyber Pakhtunkhwa. He concluded that inadequate and limited access to livelihood assets in that mountainous region increases the population's vulnerability and exposure to shocks and risks. Steimann (2005) did a comprehensive survey in 2004 to generate a database for rural households in Khyber Pakhtunkhwa. He gathered information about household rosters, availability of and access to different capitals, and the income and consumption patterns of households. The survey also collected information about the experience of any crisis in the pre-survey year, and about the types of coping strategies used. Steimann (2005) concluded that though most people relied on agriculture-related activities, the per capita yield was very low and the income level of the people was the lowest compared to other parts of the country. Very poor infrastructure and the rough terrain further contributed to people's limited access to human, physical, social and financial assets.

During the literature review, I found no econometric research focused on the livelihoods of conflict-affected households in Swat. The remaining research questions of this thesis seek to fill this significant gap. The answers to these research questions will contribute to the post-conflict livelihood literature, in particular to the affected regions in Swat. Details about the survey instrument and data collection are provided next.

4.3 Questionnaire Design

During the process of designing the questionnaire, I consulted different sources and investigated relevant formats. The useful guidelines in the detailed manual accompanying the World Bank's Living Standard Measurement Survey (LSMS)

that describes planning and implementation of surveys by Grosh and Munoz (1996) were followed. The LSMS is recognized as a powerful tool for analysis of household economic decisions, welfare and the effects of economic and social policies on households. The structure of the Household Integrated Economic Survey, conducted by the government of Pakistan, was also reviewed. In framing the wording of the questions to be asked, the general format of the questionnaire used in a study on sustainable livelihoods in Vietnam by Tran and Lim (2011) was consulted. Most importantly the detailed guidelines provided for the SLF by DFID (1999; 2000; 2001) were followed. Some of the studies which used similar kind of surveys in different settings were also consulted; these include Alwang, Jansen, Siegel & Pichon, (2005); Khan (2008); Lopez (2008); Sreedevi (2006); Steimann (2005); Tran & Lim (2011).

The questionnaire for this research includes questions about demographics, income and expenditure patterns of the households. The questions also seek detailed information for the five core capitals (human, physical, financial, social and natural), which the households possess. The SLF regards sample surveys as a purposeful instrument to collect quantitative data for household asset distribution and activity profiles. Income data from different sources helps to construct an income portfolio. To mitigate the seasonal impact of agricultural income, details about food and non-food spending were included as suggested by DFID (2000, p. 10).

Besides information from the questionnaire, case studies (see Chapter One) were conducted to understand post-conflict effects on households. These studies complemented the questionnaires in getting information in a different way from the key informant interviews. The process involves asking semi-structured questions to collect a mixture of qualitative and quantitative details. The individuals and households represent different livelihood circumstances so that a wide range of experiences can be compared. DFID (2000) suggests that case studies broaden the understanding of how human, physical, social, financial and natural assets interact, and these interactions consequently formulate livelihood opportunities and strategies.

Questionnaire customization (some questions were specifically framed in the local context) was done, including taking care to consider the eldest household member as the household head, and dealing with reluctance to provide names of female household members (if shown). It was done by using a coding system, after careful consideration of local customs in the selected research areas. The pilot study (see details later in Section 4.6) held in late 2010 facilitated the above amendments and modifications. The questionnaire was then finalized. A description of its topics and major content coverage is given next.

4.3.1 Questionnaire Content

The questionnaire starts with a section on identity and other demographic variables for the household head and all other members. The remaining sections sought the following details:

Livelihoods and Capitals

- a) Livelihood activities and human capital, its exclusion (gender specific) and questions about the valuation of human capital based on its returns
- b) Social capital, its trust and reach through horizontal and vertical linkages, and its role after the shock
- c) Natural capital and resources - degradation during the conflict (revival in the post conflict period)
- d) Physical private productive capital in the local context, also access to and availability of basic public services
- e) Financial capital, access to and availability of credit, including savings

Income and Employment

- a) Household economic activities in the post-conflict period
- b) Livestock production as a complementary source of income
- c) Non-farm self-employment description
- d) Economic activities after the conflict period (disrupted or affected)

Expenditure

- a) Household expenditure - type and amount of food expenditure during the previous week (pre-survey period)
- b) Type, frequency and amount of annual non-food household expenditure
- c) Educational expenses for each household member participating in education
- d) Health expenditure of household members
- e) Housing/Shelter-damage and reconstruction costs in the post-conflict period

Vulnerability - Expectations

- a) Vulnerability context – response to risks and shocks

The relevant information required for subsequent econometric analysis and simulation modelling, exploring the post-conflict effects on livelihood choices and opportunities was included in the questionnaire. The questionnaire content indicates that questions about the possession of capitals (human, social, natural, physical and financial) were included, and damage estimates in quantitative and qualitative terms were requested from the respondents. Market prices of various food crops, including horticultural products for agriculture-based households and other income-generating products, and output variations in the post-conflict era were collected. Data on land holdings were gathered and any recent diversion in expenditure patterns (food, education, health, housing etc.) in the post-conflict period was asked for. In addition, questions about coping practices and strategies during vulnerable periods were included.

The questionnaire was translated from English to Urdu,⁵² Pakistan's national language, to assist the interviewers and respondents, who understood Urdu well. The survey was conducted in the five tehsils⁵³ (Babozai, Barikot, Charbagh, Khwazakhela and Matta) of Swat district. The respondents were from rural, semi

⁵² Translation of questionnaire was not merely linguistic, transcoding'. It followed 'equivalence of sense' in a triangular approach advanced by Garcia-Landa (1981).

⁵³ In Pakistan, a tehsil is a small administrative unit, which is an entity of the local government. It is the second lowest tier and comprises various union councils making up towns and villages. Several tehsils make up a district.

urban and urban backgrounds; the same questions were administered to all households.

4.3.2 Questions and their Linkages

The following are a few examples of how the various questions interlink and provide information about income, livelihood assets, losses, and post-conflict household strategies.

- i. The questions relating to human capital give the researcher a clear idea about the household members' employment, or if they were not part of the labour force, then the reasons for unemployment. The questions about health and educational expenditure link human capital and household expenditure in the post-conflict period.
- ii. The status of the financial capital of a respondent provides information about the requirements for credit and saving behaviour. Its shortage will compel borrowing for various reasons. Questions about its availability and sources connect it to social capital. This information informs about the availability, quality, and quantity of financial and social capitals.
- iii. Questions about physical capital can provide links with income loss, and reduction in physical capital may lead to the adoption of low-return livelihood options.
- iv. Questions about coping strategies, estimated losses and time to recover from losses tell about households' possible substitution capabilities in the re-settlement environment.
- v. The section about access to markets and sources of information reveals the outcomes for various labour sectors including available information for change in labour allocations. This also asks about the constraints on better income-earning livelihood strategies.

The above examples provide the aims of the survey instrument; the next section describes the study areas and the selection procedure used.

4.4 Selection of Study Areas in Swat

For ease of geographical understanding, Swat is commonly divided into two parts, lower and upper Swat. The lower part consists of two major urban centres. One is

Saidu Sharif, which hosts most of the public administrative structure and offices for law enforcement institutions, and the second is Mingora, the main trading and business centre. Upper Swat comprises areas like Matta, Khwazakhela, Bahrain and Charbagh which are the hub of agricultural and orchard farming, and have many attractive tourist destinations. It was the upper, mostly mountainous areas, which the Taliban initially occupied and undertook recruitment in, and from which they later spread horizontally to other parts of the district.⁵⁴ Saidu Sharif and other lower Swat habitats were comparatively less affected during the conflict. However, there were frequent targeted attacks on various locations and houses. The most severe episodes of casualties and damage to houses, agricultural land and destruction of orchards during the civil war took place in upper Swat. Taliban occupation and the subsequent civil war resulted in up to 90 percent displacement of households in many areas.

For the purpose of this study, as mentioned in the previous section, five out of seven tehsils of Swat were selected as research sites. The far northern Bahrain (which includes the famous tourist destination, Kalam) and the Kabal tehsil were excluded. The former is 60 kilometres from Mingora. Dilapidated roads, military check posts and unavailability of public transport after sunset makes it difficult for commuters to make one-day return trips. The latter, at the time this survey was conducted, was inaccessible and unsafe due to on-going targeted military operations and occasional combat.

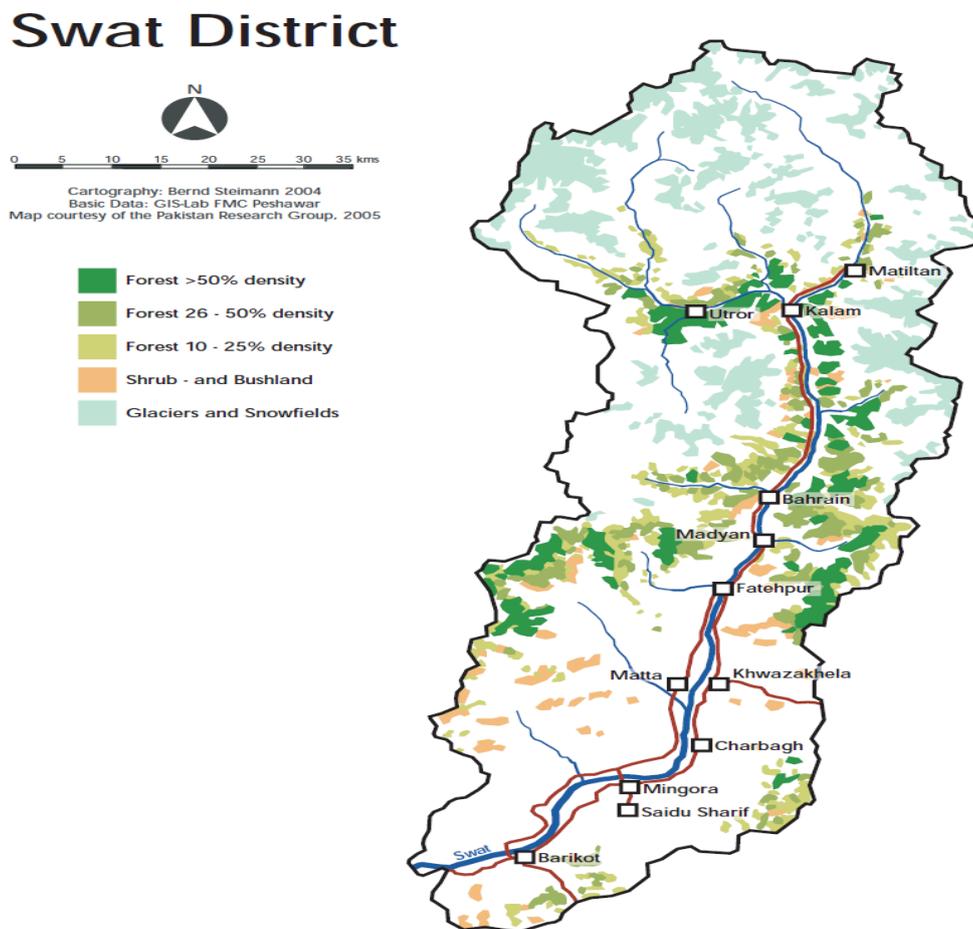
Among the research sites, at the shortest distance from Saidu Sharif is Mingora (two kilometres) and the farthest, Khwazakhela town, is 31 kilometres away in upper Swat. The damaged roads, military check posts, and mountainous heights made the travelling time many times greater than for the same distance on normal roads. The selection of five tehsils and respective study areas gave reasonable coverage for the survey within the Swat district, and identified diverse income and employment patterns. The vulnerability context and varying nature of the household responses could be difficult to understand without including sample households to cover a range of different geographic areas in these five tehsils.

⁵⁴ Details are in chapter three

Figure 4.2 provides a map presenting the geographical locations of the major towns. This map does not cover the seven recently constituted tehsils. Before the civil war, Swat consisted of two tehsils, Matta and Swat, which were increased later to seven, to decentralise the administrative set-up. Most available maps are for the two former tehsils.

Table 4.1 provides basic details about the research locations.

Figure 4.2: Map of Swat District



4.5 Units of Study and Sampling Frame

In conformity with credible income and expenditure surveys all over the world and particularly in the North-Western region of Pakistan, a household was selected as the basic unit of analysis rather than an individual. However, within the households, data for all individuals and both genders were collected. Khan (2008) suggests that it clearly looks more logical to consider the household as the

basis of income and poverty-related studies, but for analytic purposes it is imperative to have data that relates to individuals within a particular household. Household members are fundamental units that take part in income generation and other activities, experience utility, and strive for its maximization.

Table 4.1: Research Locations in Swat

Tehsil	Research Areas	Semi urban/ Urban Areas	Village	Distance from Mingora Kilometres	Percent of Sample	Displacement during Civil War- Approximate percent
Babozai	Mingora	Urban		0	31.2	60
	Qambar	Semi Urban		2		80
	Shahdara	Urban		1		90
	Rahimabad	Rural	√	1		90
	Kokarai	Rural	√	11		90
Barikot	Barikot			18	11.4	90
	Ghalagai			15		90
	Odigram			7		90
Charbagh	Charbagh	Semi Urban		17	15.2	90
	Gulibagh	Rural	√	20		90
	Allabad	Rural	√	19		90
Khwazakhela	Khwazakhela	Semi Urban		31	16	90
	Baboo	Rural		36		90
Matta	Matta	Urban		22	26.2	95
	Kharorai	Semi Urban	√	20		95
	Gowalarai	Rural	√	23		95
	Baidara	Rural	√	24	Total	95
	Bodigram	Rural	√	26	100	95

Source: Author's field survey in Swat (visits and group discussions) and Government of Pakistan's data

The household, which is identical to the Pashtun concept of 'kor' (meaning home in the local Pashtu language), is defined in this research (following SLF) as a group of people living together under a common roof. They use a common fireplace (kitchen) have meals together, and share income (contributing to the common household budget) and expenditure in that common place.

The Legal Dictionary defines the head of a household as “An individual in a family setting who provides actual support and maintenance to one or more individuals who are related to him or her through adoption, blood, or marriage”.⁵⁵ In the context of Swat, the head of a household is the person whom other members and the community recognize as the main point of reference. Most often it is the eldest male member in a household in Swat. Otherwise, the eldest son is considered as the head, mainly for social and income earning purposes. Within a household, in the case that the eldest member is a female parent or guardian, she is considered as the final authority in most of the household’s strategic decisions. It may not be necessary that the household head is working and providing maintenance and complete economic support to the family. It is a widely accepted family tradition that parents in old age usually live with their eldest son, forming a joint family structure, while the son is the bread winner of the household.

4.5.1 Sampling Frame

One important initial constraint in surveying the post-conflict area (Swat) was the author’s complete lack of knowledge of Pashtu, without which particularly the rural people in Swat are unlikely to communicate with strangers. To overcome this, help was required in the local setting. It had to be managed with a limited budget for a comprehensive survey, in a challenging environment.

The Environment Protection Society (EPS) is the biggest local operational Non-Governmental Organisation (NGO) in the area. EPS operates in Swat district and also in adjoining areas, with a range of programmes. It works in collaboration with international organizations like the World Bank, the World Wide Fund for Nature (WWF) and ADB, in relief efforts for conflict-affected households, and for other programmes in pre-conflict period. The management of the EPS agreed to collaborate in administering the survey and in field data collection. It frequently uses household survey information for its pre, post or mid-programme evaluations. The survey frame it uses is based on the voting list prepared by the Election Commission of Pakistan for the national and provincial assembly elections of February 2008.

⁵⁵The definition is taken from the online Legal-Dictionary, Retrieved from <http://legal-dictionary.thefreedictionary.com/Head+of+Household>

Casley and Lury (1987) observe that a common drawback during empirical research in developing areas is the accuracy of the lists prepared by public officials. They mention the following shortcomings in such documents:

- Units which do not belong to the population are sometimes included (over-coverage)
- Units which belong to the population are excluded (under-coverage)
- The same units are listed more than once

However, as the elections in 2008 were held after a nine-year rule by a military dictator, there was intense interest and enthusiasm for enlistment and participation, so the compilation of the voters list was taken as the most accurate of the available documents. It was also the most recent available sampling frame information, as no household census had taken place in Pakistan since 1998.

A multistage sampling design was used. In this sampling design, after an initial selection of five tehsils, two to six localities or villages were randomly selected depending upon the tehsil's population. Finally, households were randomly selected for interviewing. This created a sample as Deaton (1997, p. 10) suggests, in which sample households are geographically grouped (tehsil-wise in Swat), instead of being randomly distributed over space.

The enumerators were given a list of EPS partner households in the selected urban areas and villages in each tehsil and they initially approached those households for a positive start and to build the local community's trust in the research and eliminate any apprehensions they might have had about the survey. This initial confidence-building approach, though time consuming, gave this survey an advantage in that the rate of refusal to participate in the survey was less than two percent. In areas where there were no EPS partner households; selection of units was made after discussion with the locals. This happened in a few remote areas of Khwazakhela and rural Matta. Very remote and scattered rural dwellings were excluded as access was difficult and involved much travelling, which was impractical in terms of both time and money. The percentage of households interviewed in five tehsils, Barikot, Babozai, Charbagh, Khwazakhela and Matta,

was in approximate proportion to the population of each tehsil (Table 4.1). For example, the most populous tehsil is Babozai⁵⁶ and more than 31 percent of the sample households were interviewed there. It is to be noted that any updated population data for the tehsils, particularly after the huge displacements, was unavailable. The proportional representation in the sample was adjusted after field discussions and in conformity with the available sample frame.

4.6 Training of Enumerators and Pilot Study

Five enumerators were hired locally, who had working experience both with NGOs and in conducting household surveys in the region. They were trained for two days at the premises of EPS in the basics of the SLF and on the importance of quantifying poverty with an asset-based approach. The questionnaire and its contents were thoroughly explained, and the trainees gave some useful suggestions to make it more relevant in the local context. Enumerators were further instructed in sound interviewing techniques. They were informed about the content and use of the participation consent form, the nature of the study and about the rights of the respondents.

It was communicated to them that the following steps were to be followed once participation was confirmed:

- a) Arrange a pre-interview appointment, and record it in a notebook. It is not good to miss an arranged appointment.
- b) A private and quiet place increases the probability that respondents will provide the most honest answers.
- c) Brief explanation of the survey is very important; it helps in confidence building and getting the best possible answers, that will help the researcher to better understand the income, asset poverty and post-conflict effects.
- d) Questions should be asked exactly the way they are written. This makes all interpretation easier.
- e) It is a voluntary service for the respondents, so politeness and respect must be maintained.
- f) The interviewer must wait until respondents complete their answers.

⁵⁶ It includes the populous areas like Mingora, Saidu Sharif, Qambar and Shahdra, which are urban and semi urban. These areas were also the centre of Taliban activity during their occupation.

- g) When answering is lengthy or unclear, ask again in slightly different words.
- h) If the interview is refused or left incomplete, simply try the next appointment.

The research conformed with the University of Waikato Human Research Ethics Regulations and was approved by the Ethics Committee of Waikato Management School.

The training session was followed by a pilot study in November 2010. A random pilot study of 50 households in Swat was conducted to investigate the practicability of the questionnaire in Mingora and other areas including Islampur, Qambar, Ghalegai, Khwazakhela and Matta. Following the suggestion of Glewwe (2005), the pilot study was conducted in both urban and rural areas. The successful completion of the pilot study made us very optimistic about conducting the complete survey. It provided useful insight and feedback about the survey questions; the wording of a few questions was modified⁵⁷ and the household head (as discussed earlier) was redefined in the local cultural context.

The enumerators initially did two interviews per day in different localities; this familiarized them with the questions and the content. Each interview took approximately two hours to complete. The respondents' willingness to participate was encouraging. The interviewing team members were locals, knew Pashtu and were familiar with local customs and culture. The enumerators had no language barrier and that facilitated gaining the instant confidence of the respondents and helped in explaining the questions in the local language (if required). As mentioned earlier the listing of EPS partner households was vital to getting the excellent response rate achieved. Participation in the survey was voluntary, but the refusal rate was less than two percent. One apparent reason for the motivation to participate was the relevance of the introduction and questions to the most critical experiences in the lives of the affected populace. The full survey was completed in October, 2011. In total 304 households were approached during the survey, which resulted in 296 completed questionnaires.

⁵⁷ For example, instead of acres, the locally used unit of land, the jareeb, was included.

4.7 Data Management and the Quality Control

The collected field data were tabulated using Microsoft Excel spread sheets. The data were carefully checked for typographic, transcription and other errors. In addition to quality control performed during the data collection stage, the following checks were performed in the data editing phase. Procedures suggested by Munoz (2005) were followed.

Range checks: It was ensured that the data contained values within the domain of valid values. For example the answer to a question, if it contained multiple numbers as answers, was one of the given numbers.

Consistency checks: It was carefully checked that answers in different sections were consistent with the household description and with other external references. For example, informal education, particularly in madrassas, is free of cost. Hence, if a respondent had reported a madrassa as regular educational expense in his/her household, this was excluded from the total expenses of the household. In some cases, households reported electricity consumption despite the fact that they did not have electricity connections, in the section on availability of public goods and assets. Such responses were cross-checked with information from other surveys to determine whether or not the particular area had an electricity supply.

Skip checks: During the data entry phase, I verified that skip patterns were followed appropriately for different questions. For example, if a child less than four years of age was reported as being enrolled in a school, since it was unusual in the local context for a child of that age to be attending school, it was dropped from the list of members getting education.⁵⁸ Similarly, in sections about social capital, some respondents had reported that they had not received help from anyone; however, in the section where they were asked if they had received financial credit, they reported in the affirmative. The answer was accordingly made consistent in the social capital section.

Yansaneh (2005) advises that if observations for some variables concentrated in a small number of households do not appear credible, then those should be dropped. Some households reported high consumption yet low income sources if other

⁵⁸ Urban centres having more schools, some parents may send very young children to school, but in remote areas it is not the tradition.

sources like credit or selling of assets were not reported. These households were thus dropped for the analysis stage. Similarly, farm production and income of some households were not consistent with the reported land holdings. Other plausible missing values in data were imputed with nearest neighbour methods, which consider a 'best guess' for a response when none is available (Yansaneh, 2005). In total, 21 questionnaires were excluded from the analysis stage.

There was a successful outcome (complete and usable data) for 275 households consisting of 2,288 persons in the conflict-affected population.

4.8 Conclusions

The household data from 275 affected households in Swat covers the asset portfolio, income and consumption (including food and non-food) and expenditure on health and education. Other than the recorded data, the visits and interactions with various people in Swat provided useful first-hand information that would be helpful in explaining key research findings in later parts of the thesis. This survey was conducted in remote, conflict-affected areas with damaged physical infrastructure, where the local economy was still struggling to revive and people were vying to pursue their pre-conflict livelihood patterns. It was a difficult environment for this study, and budget constraints made the task even more difficult. Except for some financing from the Department of Economics at The University of Waikato, the rest was self-financed. However, the remarkable cooperation of the EPS management and its staff was an asset in the successful completion of this initially difficult-seeming task. Enumerators travelled to distant places on dilapidated roads and used unreliable transport networks. Sometimes they walked up to three kilometres in mountainous locations to reach a particular place. The motivation of all team members was a significant factor in the successful completion of the fieldwork.

The next chapter presents key survey findings and explains the demographic characteristics of the households and their asset distribution in Swat.

Chapter Five

Description of Households and Assets in Swat

5.1 Introduction

This chapter provides descriptions of livelihood assets alongside the results obtained from the background statistical analyses of the household field survey information. The descriptive statistical analysis includes aspects of household demographics and patterns of possession of the various capitals (human, financial, social, physical, and natural). These assets help households to pursue various livelihood strategies. This chapter also includes analysis of the different sources of income, savings, and expenditure patterns (food and non-food), including expenditure for education and health in Swat. The detailed picture of post-conflict household livelihood assets presented in this chapter thus addresses the second research aim of the thesis that investigates the various forms of post-conflict livelihood assets in Swat. The answer to this research question provides insights for the later econometric and simulation analysis. For instance, the summarized results of the household assets portfolio facilitate the choice of parameters for the livelihood analysis in the following chapter, which uses cluster analysis techniques to investigate the role of assets in making post-conflict livelihood choices. Results such as educational attainment and its pattern in the context of Swat support the selection of the relevant covariates for human capital in the livelihood analysis.

In addition, the findings from the statistical analysis of the survey data support the background discussion, selection of parameters and different assumptions for the simulation modelling described in a later chapter. Reasons for unemployment, the extent of damage to and loss of physical capital, both public and private, and findings about financial capital, particularly savings and credit, are significant in modelling the labour allocations in Chapter Seven. Finally, the results and conclusions from this chapter help in understanding the coping strategies of households, particularly in the one-year period following the conflict.

5.2 Household Demographics and Human Capital

The sustainable livelihood literature often notes that the chief asset possessed by the economically deprived is their labour (DFID, 1999; Ellis, 2000; Scoones 1998). Human capital in a broader sense encompasses the skills, knowledge, ability to labour, and good health that in combination enable people to pursue livelihood options and achieve their livelihood objectives. At a household level, human capital varies according to the household's size and skill levels. Scoones (1998) observes that human capital is a crucial factor for successfully adopting and pursuing different livelihood strategies. DFID (1999) regards human capital as a livelihood asset that is a building block in achieving different livelihood outcomes.

Table 5.1 next, explains basic characteristics about the surveyed households, such as the age of household heads and mean household numbers in Swat. The mean age of the household head was 52.5 years. The average household size was 8.3 persons. This was higher than the average household size of 6.8 in Pakistan, as determined in the last national census of 1998. The same source cites average household size in Khyber Pakhtunkhwa as 8.0, which is quite close to the findings of this study for the Swat district. No national population census has taken place since 1998 in Pakistan. Therefore, any comparison of surveyed household demographics with current official documents is difficult.

Households are categorized in terms of size, gender, age and educational attainment in Table 5.1, which indicates that 41.1 percent of households were larger than the mean value. This demographic characteristic is significant: joint family systems and very early marriages, particularly of females, are common social and cultural practices in Swat district. Moreover, having many children, particularly male, is considered economically advantageous for the future. This results in larger household sizes. During the survey, few female members were observed to be part of the active labour force. This could lead to an increased dependency burden,⁵⁹ and decreases in per capita food and non-food consumption.

⁵⁹ It is explained as ratio of the young and old not in the active labour force (the dependent part) to those typically in the labour force (the productive part). Further, it is used to measure the economic pressure on the productive part. *Wikipedia*. Retrieved from http://en.wikipedia.org/wiki/Dependency_ratio

Studying sustainable development in remote areas of Honduras, Jansen, Pender, Damon, Wielmaker and Schipper (2006) observe that household size and the dependency ratio had a negative direct effect on income per capita. Households having more dependents and larger families are likely to exhibit reduced income per capita and thus reduced consumption.

Age is divided into four categories in Table 5.1. Young people from 0 to 15 years formed 32.9 percent of household composition, while the age group 16 to 24 years constituted another 24.6 percent of the population. This age group, as mentioned by Collier and Hoeffler (2004), is potentially the most likely to be recruited as fighters in militant organisations. In contrast, these household members could also be active workers in the labour market rather than fighters. The choices made may depend upon the wages or profits received, as discussed later in Chapter Seven. The third age group encompassing adults in the range 25 to 60 years had the highest representation in the population, 899 people and 39.3 percent of the population. This is economically the most active age group in the public and private sectors of Pakistan. In Pakistan, 60 years is the upper age limit for public sector jobs, and is the age of retirement. People older than 60 years represented a low proportion (3.2 percent) of the sample population. It is pertinent to mention here that overall life expectancy at birth is about 66 years in Pakistan (HDR, 2013). Lack of adequate public health infrastructure, the high cost of private medical care, the declining percentage of public expenditure on health,⁶⁰ and low incomes affecting food consumption are the factors that explain this low percentage presence of people older than 60 years.

⁶⁰ Pakistan's public expenditure on health is less than 1 percent (0.8 percent) of GDP (HDR, 2013). The same source reports that the population below the income poverty line of \$1.25 per day is about 23 percent.

Table 5.1 Household Demographics – Age, Household Size, Education and Gender in Swat

	Mean	Minimum	Maximum	Std. Dev.	Obs.
Age of household head (years)	52.5	25	90	12.9	275
No of household members	8.3	3	16	2.8	275

Structure and Composition of Household **Frequency** **Percent**

Households with 8 or fewer members 162 58.9

Households with 8 to 16 members 113 41.1

Total **275** **100**

Female HH members 1053 46.02

Male HH Members 1235 53.98

Total **2288** **100**

Age Composition (Years)

0 to 15 753 32.9

16 to 24 563 24.6

25 to 60 899 39.3

> 60 73 3.2

Total **2288** **100**

Educational Features

Household heads who cannot read or write 180⁺ 65.4

Household members who can read or write only 1622 71.5

Household members who cannot read or write 648 28.6

Education 1 to 5 years (Primary) 520 22.9

Education 6 to 12 years (Secondary) 756 33.3

College/University and Technical Training 298 13.1

Madrassa – Religious seminaries 180 7.9

Other – Unspecified 4 0.1

Total **2269*** **100**

*n = 2269 and + denotes 180 household heads are from 275 households

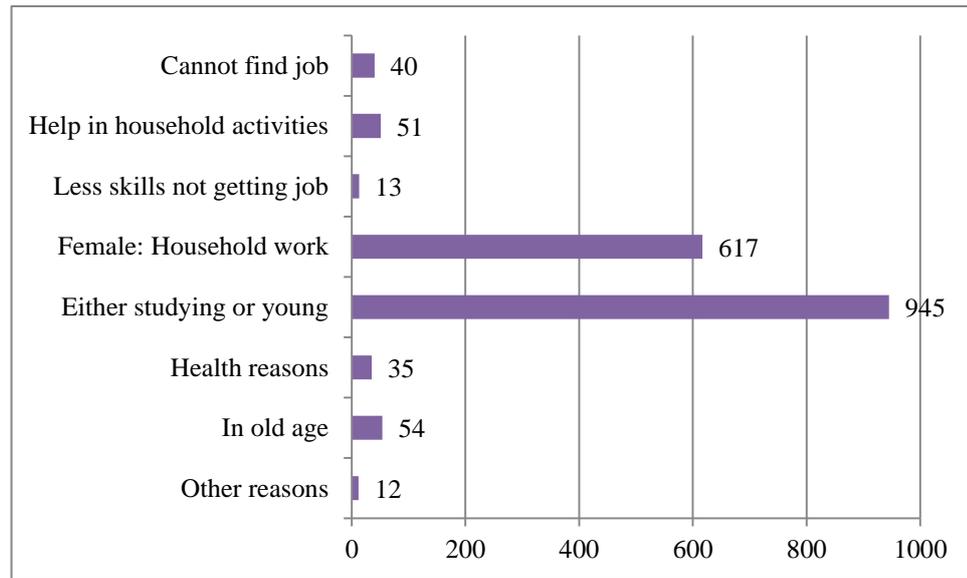
Source: The author's survey data, 2010-11

About 65 percent of household heads could not read or write, but among all household members the basic literacy percentage was higher (71.5 percent). Despite the relatively high percentage of basic literacy, only about 13 percent of household members attained an education higher than secondary level, or any technical training. Another aspect of educational status is that about eight percent of family members were enrolled in madrassas, where they received religious education only.

5.2.1 Reasons for Not Being Employed

The total number of household members aged from 16 to 60 years was 1460. Among these, 510 or 34.9 percent were part of the active labour force one year after the conflict. The one-year period covered by the survey starts when displaced people had mostly returned to Swat, by around the end of 2009. The number of employed indicates that around two household members on average were actively employed among the surveyed households. One significant expected finding was that among the female members aged 16 to 60, which represented 29 percent of the population, 93 percent of the females were full-time involved in household work, or stayed at home. Figure 5.1 provides the classification of all members (male and female) who were involved in activities other than being part of the active labour force; it includes their particular reported reasons for not joining the job market. Household members who could not find jobs included those who had skills and education but for whom relevant job openings were low, while members who lacked skills were not getting any kind of employment in the post-conflict labour market.

Figure 5.1: Reasons for not Joining Job Market in Swat (numbers)



Source: Field survey in Swat

5.2.2 Exclusion and Valuation of Human Capital

The Taliban, from the very beginning, opposed female education and the operation of girls' schools, particularly at primary level in Swat. They considered this un-Islamic. In Federally Administered Tribal Areas, which are the current arena of on-going civil war; incidents of burning or blowing up of educational institutions, specifically girls' schools, are still common. Such actions aim to exclude girls from educational facilities and the opportunities which education can create for them. In 2009, the Taliban banned girls from going to school in Swat and gave their parents deadlines to withdraw their daughters from schools. Most parents followed the orders from the militants (Shahid, 2011).

Considering this background, the survey questions also sought opinions from the respondents regarding the available educational infrastructure, and their views about girls receiving formal school education. Figure 5.2 explains the qualitative responses for the available educational facilities for girls. Figures 5.2.1 and 5.2.2 indicate the perceptions of the population about formal female education, and their attainment in schools besides religious learning.

Figure 5.2: Are there educational opportunities like schools for girls available in your area?

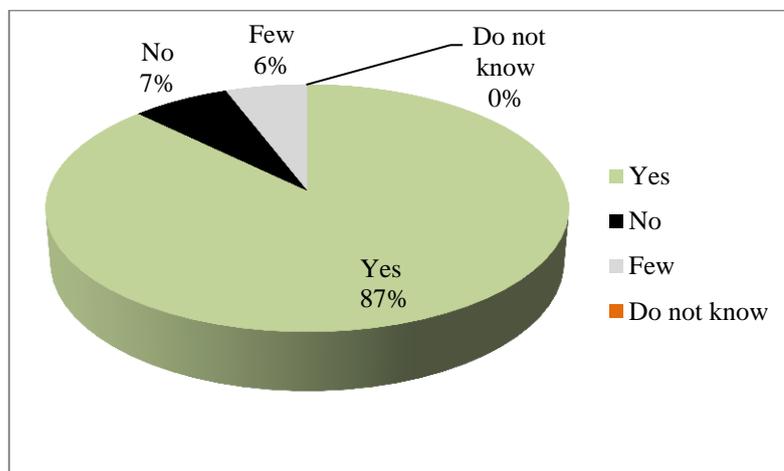
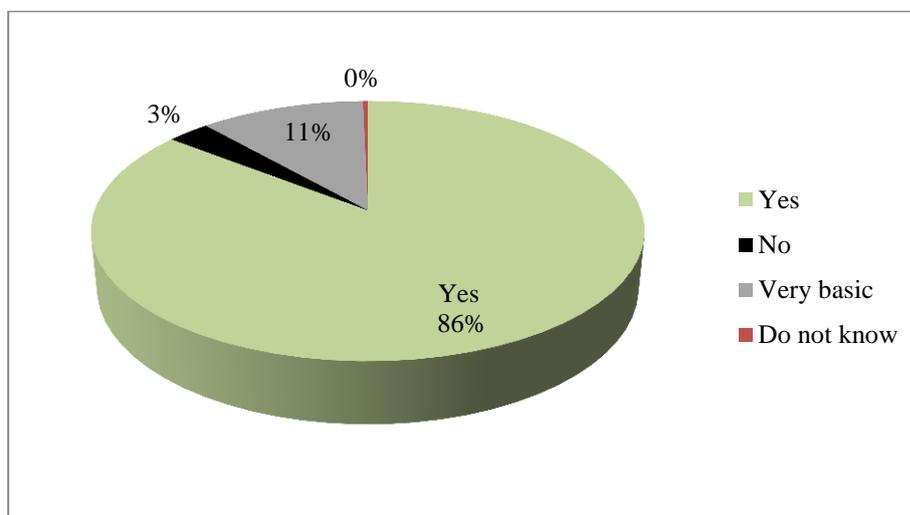
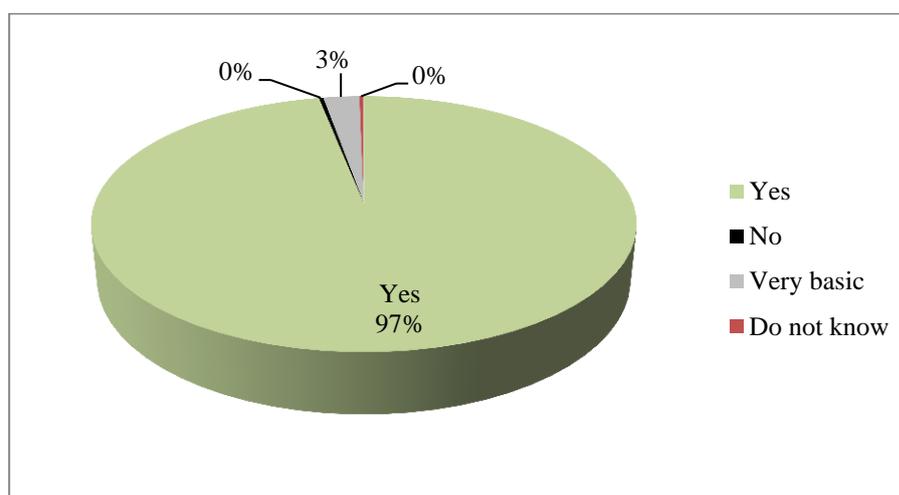


Figure 5.2.1: Do you believe that girls must get a school education?



5.2.2: Alongside religious education, should girls get formal education in schools?



An overwhelming 87 percent of households responded positively about the adequate availability of educational opportunities, like schools for girls in post-conflict Swat.⁶¹ Similarly, 86 percent believed that girls should get a formal school education. The number was higher (97 percent) where they were asked about the household's view on whether girls, in addition to religious education, should get formal education in schools.⁶² These findings about not believing in any gender bias in education are different to some perceptions (initially reported by media, quoting political⁶³ and religious leaders favouring the Taliban) that the social views of the Taliban had local public support. Participation of girls or women in education and economic activities was what the Taliban denounced most by the violent means. In total 710 schools were destroyed in KP province, and 600,000 children missed one or more years of schooling, because of militancy and

⁶¹ All educational institutions though were not functional in post-conflict period as hundreds were destroyed by the Taliban

⁶² However, few female members pursue higher education, as evident from Figure 5.1. Most women do household work, instead of being part of the educational system and employment opportunities.

⁶³ For example, Pakistan *Tehrik-e-Insaff's* (PTI, the Movement for Justice in Pakistan) chairman Imran Khan, whose party currently heads the provincial coalition government in Khyber Pakhtunkhwa, supported the Taliban's sharia governance. Retrieved from http://www.dailymotion.com/video/x15joc5_imran-khan-supported-taliban-s-sharia-law-in-sharia-law-in-swat-valley-pakistan_lifestyle

displacement in the province. In Swat district alone, 121 schools were completely destroyed and 280 schools were partially damaged (SPARC, 2011).

The survey findings reveal that people in Swat think differently from the Taliban's views about education. Swat has historically been a very accommodating and religiously moderate area, where people of different sects and religions lived in harmony. Ahmed (2009)⁶⁴ remarked that the Wali of Swat introduced compulsory education for boys and girls in the 1950s. He also invited Catholic nuns to open a girls' school in Swat. Buddhist civilization had considerable input in Swat, starting in the 2nd century B.C. The region's peace and tranquillity brought them there. The magnificent statue of Buddha at the entrance of Swat (destroyed by the Taliban), symbolised the peaceful spirit of the state and its rulers.

Table 5.2 is based on answers about the significance of education and human capital to better living standards in Swat. Ninety four percent of the respondents believed in the positive relationship between education and better living standards. The proportions of those who reported adequate availability of jobs for the educated, and those who did not, or had another opinion, were quite similar (49 and 51 percent). This finding might imply that some educated household members are working in jobs for which they are over-qualified from an educational perspective, are underpaid or are helping in household activities as suggested in the earlier sub-section 5.2. Moreover, a sizeable 66.1 percent of households stated there were better employment opportunities with better education and improved skills. These results about employment were relevant and worthwhile for modelling labour allocations and subsequent inter-sectoral labour movements.

⁶⁴ Akbar Ahmed, an anthropologist, talks in an interview about his PhD thesis completed in 1976 titled: Millennium and charisma among Pathans: A critical essay in social anthropology. Retrieved from <http://www.antropologi.info/blog/anthropology/2009/how-can-anthropology-help-us-understand-swat-and-taliban>

Table 5.2: Valuation of Human Capital

	Percentage			
	Yes	No	Not sure	Do not know
Does education help households to live an economically better life?	93.8	0.36	4.3	1.4
Do educated household members have opportunities to get jobs?	49	22.1	24.7	4
Do those household members who have better education/skills get better jobs?	66.1	8.7	19.6	5.4

Source: Author's field Survey sin Swat-2010-11

5.3 Social Capital

Social capital is the social resources upon which people rely in pursuit of their livelihood objectives. These are developed through connections, either vertical (patron/client)⁶⁵ or horizontal (between individuals with shared interests). These resources are further developed within different formalised memberships and relationships of trust that facilitate co-operation, which may provide the basis of informal safety nets (DFID, 1999). These relationships have positive impacts as DFID (1999) explains: through networks and connectedness, people increase trust and their ability to co-operate. This extends their access to other institutions. One of the economic functions of social capital is to decrease the transaction costs associated with formal mechanisms like contracts, hierarchies and bureaucratic set-ups (Fukuyama, 2000). Consequently, it enhances performance in economic relationships and can improve people's income and savings. Social capital can at best be scaled and described in broad qualitative terms. Ellis (2000) observes that most of the mutual benefits from social capital are hidden in human relationships and linkages. These can be discovered only by detailed anthropological research or their significance emerges only at times of some livelihood crisis, or during external shocks. The qualitative assessment of social capital and relationships for households in Swat is presented next.

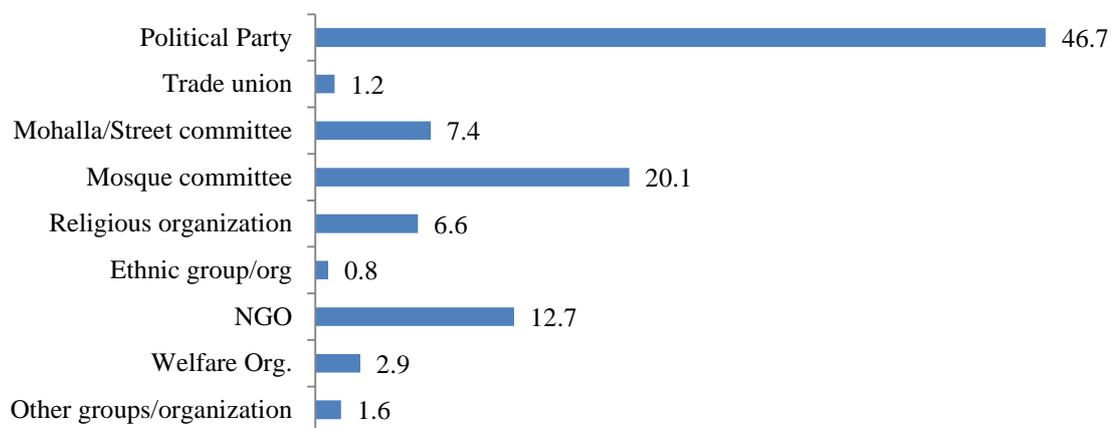
⁶⁵ It is mutual relationship between an individual who has authority, better social status, wealth or some other personal resource (the patron) and another person who benefits from his/her support or influence (the client). Retrieved from http://www.webref.org/anthropology/p/patron_client_relationship.htm

In Swat, associations with more formal groups and organizations as categorized in Figure 5.3 are in agreement with observed behaviours, and as found during the course of field discussions. Formal groups and associations regarded as affiliations with different social and economic organizations, like trade unions, government sponsored organisations, clubs or associations, have a low percentage presence in Swat. The highest percentage association among relatively organised associations was with the political parties. About 47 percent of households reported having at least one member associated with a political party. Usually, political parties do not have very formalized partnerships with their members in Swat. The exceptions are the religion-orientated political parties, which are comparatively better organized, and keep closer relationships with their members. The survey also asked for associations with groups in the local context, such as mosques and street committees. Households who reported such associations had response percentages of about 20 and 7 percent respectively. These group formations mostly remain initiatives of the community, and usually participation in these is regarded as a duty to the community.

Figure 5.4 reports the benefits that households perceived and associated with formal group membership. Answering the query about changes in the post- and pre-conflict intensity of and participation in social associations, 10 percent of the respondents said it had increased over the last 3 to 4 years, for 58.7 percent it had remained unchanged, while 31 percent expressed a decrease in their formal social connectedness compared to past years. Conflict and displacement in Swat affect associations, economic structure, and weaken existing social bonds and linkages in the affected areas.

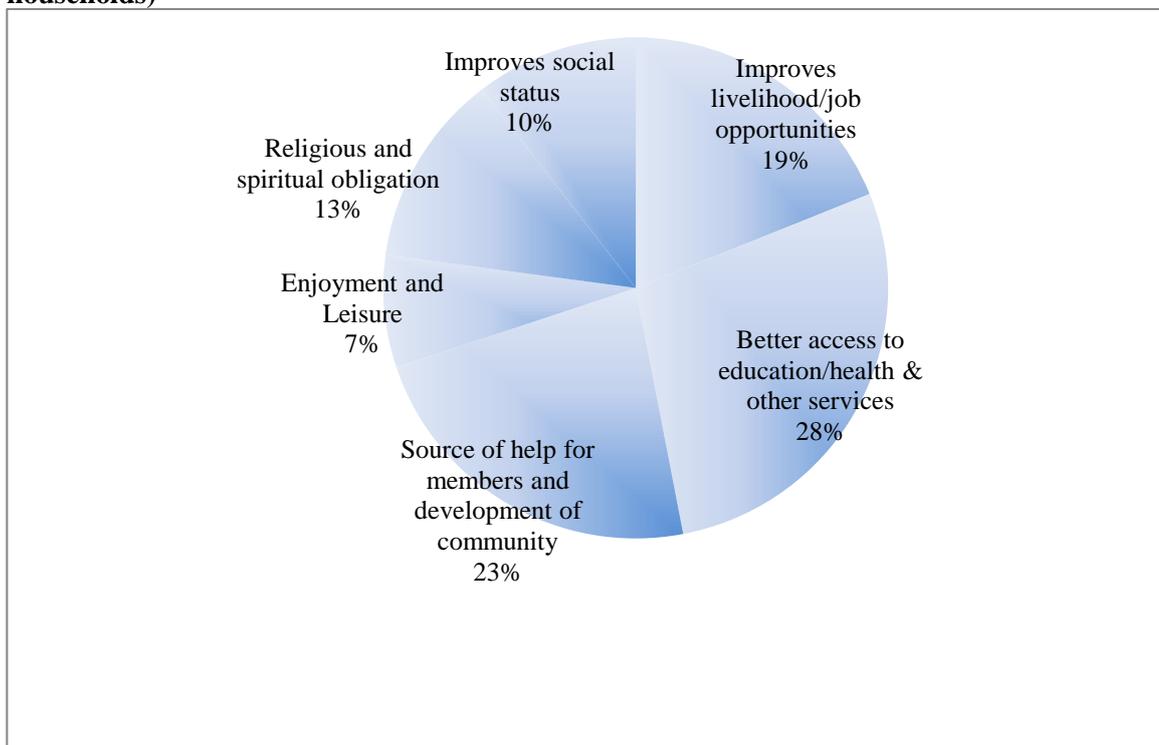
Other groups associations are mostly casual, but the strongest associations remain with family, networks of friends, and neighbours. These associations are mostly informal (except family, others are loosely structured), but are more deeply interlinked than any other network structure.

Figure 5.3: Household Association with Formal Groups and Networks in Post-Conflict Swat (percentage)



Source: Field survey in Swat

Figure 5.4: Benefits of Formal Group Memberships in Swat (percentage of households)



Source: Field survey data

The survey questions for this section assessed the reliance on and trust in horizontal linkages during a household crisis, and further specifically asked about

such reliance during a financial crisis. The response percentages are given in Table 5.3. Among the sample population, there was a high expression of trust and confidence in horizontal linkages, which include family, friends, relatives, and neighbours. More than 66.5 percent expressed trust in many people for possible help during a household crisis. When asked about financial help, 43 percent answered that many people beyond the household could be asked for financial assistance.

Table 5.3: Social Capital: Horizontal Linkages in Swat

Linkages and perceptions	Percentage			
	No one	1 or 2	3 or 4	Many people
<i>Trust and Help</i>				
How many people are around, whom you trust in private matters, and can ask for help in a household crisis?	2.1	9.4	21.8	66.5
<i>Financial Help</i>				
How many people beyond the household, can you ask for financial assistance in a crisis?	4.3	23.2	29.4	43

Table 5.4: Household Perception of Various Past and Present Inequalities (percentage)

Horizontal Inequality (1 – 5 scale)	None	Some extent	Neither less nor greater	Great extent	Huge presence
Inequalities on the basis of income, social status, and ethnic or linguistic backgrounds exist in almost every area. To what extent are these present in your village/community?	23.2	29.8	14.1	15.2	17.4
Changes in perception about inequalities	Increased	Decreased	No change		
Compared to 3 or 4 years ago, How would you rate various inequalities (including income) now?	7.7	49.4	43		

**All 275 households responded to this section*

Source: Field survey in Swat

Table 5.4 provides percentage expressions of existing or past inequalities in various spheres (economic, social, ethnic and linguistic), which could be possible barriers to stronger mutual relationships. Around 33 percent expressed the

presence or existence of various inequalities among people in their everyday lives, to a large or very large extent. However, in response to another question, 43 percent felt no change in various inequalities over the years. When asked about any increase now, 7.7 percent of respondents responded in the affirmative, while almost 50 percent reported a decrease in inequalities and poverty. This information is used in Chapter Seven in describing ‘push factors’ to join the militants. People, who perceive poverty and inequality now, were almost having similar percentage than people who think otherwise. Some of the factors like financial with resumption of some economic activities (and even ideological), motivation for recruitment may have decreased after experiencing militant sharia governance practices.

5.4 Natural Capital

DFID (1999) regards natural capital as the natural resource stocks which are useful for livelihoods. Some of these include land, water, forests, marine resources, and air quality. Ellis (2000) noted that natural capital is not static, and is enhanced when it is under creative human control, resulting in increased productivity. However, conflict situations have negative effects, from the first fundamental shock to the people, to losses of natural capital. The greed hypothesis of Collier and Hoeffler (2002; 2004), in studies probing causes of conflicts, ⁶⁶cites plunder of natural resources and capital as an important motivation to rebel and for subsequent violent conflict.

Table 5.5 looks at some dimensions of natural capital in post-war Swat. It explains that for irrigation, more than 72 percent of households relied on canal water that originates from the River Swat. The civil war seriously contaminated the water as a result of heavy shelling and explosive materials. During field visits, local people told the author about several instances where bodies were found in river and canals. These factors and others such as closure of canals decreased the water supply substantially. This decrease was reported by 84.2 percent of the households interviewed. The war damaged crops: new crops could not be sown, orchards left unattended during the war and resulting displacement were immensely affected, and yields were severely reduced. More than 96 percent of

⁶⁶ See more details in Chapter Two

the population involved in agriculture reported losses in yields and production resulting from conflict. This finding valuably informs understanding of agricultural income losses and the livelihood strategy analysis that compares agriculture with other livelihood strategies in Chapter Six. Moreover, 89 percent reported that they did not receive any government assistance or contribution towards the revival of agriculture. Regarding job losses, 16 households reported job losses in forest-related activities, and 11 of these had not found jobs at the time of the survey.

Table 5.5: Natural Capital, Resources and Post-Conflict Effects

<i>Type of water used for agriculture</i>	Frequency	Percentage	
Canal water	138	72.3	
Rain water only	36	18.8	
Tube well	7	3.7	
Spring water	10	5.2	
Is available water sufficient for irrigation	Sufficient	Not sufficient	Barely sufficient
	51 %	54.4 %	14.6 %
<i>Irrigation water during and after conflict</i>	No change	Increased	Decreased
Was your water supply affected during the conflict?	11.7 %	4.1 %	84.2 %
How is the water supply now for irrigation?	63.7 %	11.1 %	25.1 %
<i>Production/output and conflict</i>			
Was your agriculture production affected due to the conflict and civil war?	3.5 %	0 %	96.5 %
<i>Post Conflict Agricultural Expense and Support</i>	Yes	No	
Do you apply more fertilizers and spend more money on other inputs now?	95.9 %	4.1 %	
Any support received from the government to increase yield and agricultural production in recent years?	10.9 %	89.1 %	

Source: Field survey in Swat

5.5 Physical Capital

Physical assets comprise the basic infrastructure and producer goods that help to support livelihoods (DFID, 1999). Infrastructure consists of changes in the physical environments that help people to meet their needs and be more productive. It includes roads, telecommunications, irrigation systems and rail networks. In economic terms, physical capital is regarded as a 'producer good' in contrast to a 'consumer good.' Ellis (2000) differentiates between these two types of goods. The latter is purchased or consumed for its direct effect on material standards of livelihood, whereas a producer good is purchased and utilized for creation of output, and these goods harmonize the future flow of output. For example in Swat, consumer goods can be food and non-food items for household use, while producer goods in agriculture are tools, any machinery, or equipment useful for production processes.

Physical assets in this research are assessed via two dimensions, one of which is private assets, which help to increase household farm and non-farm productivity. Such assets include affordable transport, secure housing, better sanitary conditions, economical energy sources, and access to information. Secondly, assets and goods are included that are part of the public infrastructure and provide basic utilities and services. These may reduce the cost and time involved in using traditional consumption items, and are useful in increasing productive output in the local context (Table 5.7). These include facilities: for example, piped drinking water is a highly sought-after utility in Swat. If it is not available, the mountainous areas make it quite difficult to bring drinking water from far-off springs. This was a household crisis during the conflict. Water carrying was mostly done by women, who were restricted by the militants from leaving their houses for social or economic participation.⁶⁷ Moreover, the insecure environment discouraged women from going outside the house. War thus had effects on both dimensions (private assets and public utilities) of physical capital.

This study considers the middle end mean market price (i.e., it excludes high-end brands and the cheapest products), as the basis of private physical capital valuation. This is for a workable and reliable assessment of assets, acknowledging

⁶⁷ Women were strictly barred to go outside without any male family member

the fact that surveyed households had different income portfolios, which may affect their purchasing choices. It is pertinent to mention that accurate assessment of the value of physical assets is difficult: depreciation, origin, time of purchase, inflation or brand can influence the valuation. During the pilot study households were asked for values, and either they did not remember or found it difficult to accurately guess the current value (of the used items). This could lead to incorrect assessment for many households. The determination of an average asset price was considered practical for this study.

Significance of physical assets varies with time and place, and the list of items in this section was formed with reference to the post-conflict livelihoods of sample households in Swat. The items included covered both rural and urban households. For example, rural households may not be keen to have a telephone line for communication compared to an all-season farm-to-market road. However, urban populations would be keen to seek such a utility. Similarly, possession of agricultural tools and equipment that rely for their functioning on electricity may not be desirable in the absence of electricity connections, and were not included e.g. tube wells. This source of irrigation, relying on electricity supply or on diesel fuel, is expensive to operate. Moreover, utilizing high priced fuel-intensive equipment like tractors and wheat harvesters on small farms is less feasible. The survey results verified that few households own these. Their value impact on physical assets is therefore separately calculated.

Households reported owning few physical assets, and most agriculturally-orientated households lacked productive input tools. For example, as Table 5.6 describes, seven households reported having tractors while only 26 had insecticide sprayers, which are relatively cheap and productive agricultural tools. Common agricultural assets comprise basic tools for soil and crop cultivation and maintenance. The average value from a list of 19 items was found to be Rs. 43,096 (US \$490).⁶⁸ If costlier items, which few households possess, like tractors and trolleys, ploughs and wheat harvesting machines are excluded, the value further decreases to Rs. 36,041 (US \$ 409).

⁶⁸ Conversions to US dollar are made at approximate market price of PKR during mid-2011, 1 US\$ = 88 PKR

Table 5.6: Asset Description of Households in Swat

	Productive Assets	Number of Households	Quantity*	Percent of H.H
<i>Serial</i>	<i>Machines and Productive Tools</i>			
1	Motorcycle	26	28	9.5
2	Bicycle	34	38	12.4
3	Donkey cart	4	3	1.5
4	Tractor	7	7	2.5
5	Wheat Harvester	3	3	1.1
6	Farming ploughs (Basic manually used)	5	5	1.8
7	Pesticide sprayer	26	26	9.5
8	Tractor trolley	4	4	1.5
	<i>Other Household Assets</i>			
9	Mobile phone	260	596	94.5
10	Video camera/or other	29	34	10.5
11	Television	143	171	52.0
12	Radio	206	240	74.9
13	Sewing machine	199	216	72.4
14	Computer	81	86	29.5
15	Refrigerator	109	112	39.6
16	Water heater	24	35	8.7
17	Water pump	90	92	32.7
18	Fans	265	1143	96.4
19	Pressure cooker	262	303	95.3

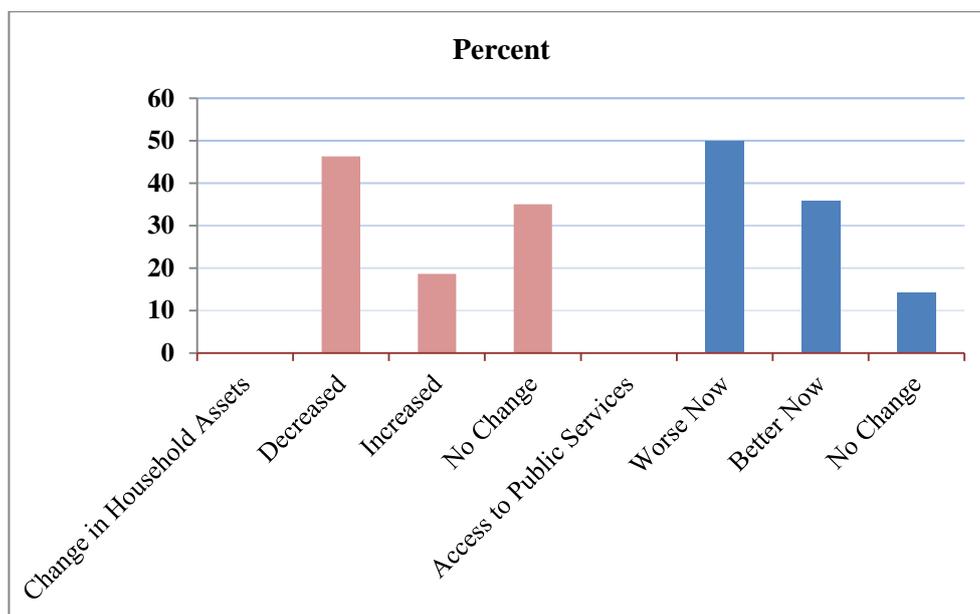
*Some households reported having an asset in multiple quantities. For example, for fans, mobile phones or radio many households reported owning more than one, therefore quantities exceed the number of households

Source: Field survey in Swat

Figure 5.5 provides estimates of the change in household assets in the post-conflict period and the effects on public services and utilities. More than 45 percent of households' assets decreased while 18 percent reported an increase.⁶⁹ The post-conflict asset losses or gains depended upon the adoption of particular livelihood strategies, substitution capabilities, and whether the household was located in a very active war zone and was displaced or not.

⁶⁹ Later Section 5.7 and Figure 5.8 describe specific changes in assets and in more detail

Figure 5.5: Change in Household Assets and Quality of Public Services in Post-Conflict Swat



Source: Field survey in Swat

Table 5.7: Household Assets and Access to Public Utilities in Swat

Serial	Assets and Public Utilities	Number	Percent of Households
1	Piped drinking water availability	158	57.4
2	Electricity connection	266	96.7
3	Natural gas connection	48	17.4
4	Firewood availability	222	80.7
5	Brick house	160	59.3
6	Wooden or mud house	110	40.7
7	Ownership of house	226	82
8	Rented house	49	18
9	Separate kitchen	237	86
10	Toilet facility in house	233	84
11	T.V. Cable connection	55	20
12	Access to newspapers	141	51.2
13	<i>Pucca</i> /Metalled road to a nearby town	234	85
14	Access to nearby educational institutions	239	86
15	Access to nearby health facility	231	84

Source: Field survey in Swat

Table 5.7 elucidates details of basic household facilities and access to public utilities and services. A sizable number of households owned houses, but in the mountainous remote areas studied it is common to build small low cost *kacha* (mud) houses or a wooden house. Piped drinking water was available to 57 percent and natural gas (comparatively a cheaper energy source), only to 17 percent of households. Its unavailability compels reliance on costlier cooking and heating sources like liquid petroleum gas or the time-consuming and burdensome choice of fire wood collection. This collection is mostly carried out by women (who sometimes have to walk to forest areas and carry back the wood) thus affecting their other household activities.

5.6 Financial Capital

Financial capital is possibly the most versatile among the assets that households possess. It consists of the financial resources that people use to achieve their livelihood objectives. DFID (1999) explains that cash and equivalents are important, and these enable people to adopt various livelihood strategies. Financial capital consists of two main sources, one being available stocks like savings (cash and bank deposits) or other liquid assets such as jewellery and livestock. The second source excludes earned income. It may include money received from pensions, and regular transfers from state and remittances. Financial capital is most flexible since it easily converts into other capitals. It can also be used directly to achieve livelihood outcomes, for example, buying of food or non-food items (DFID, 1999)

The next sub-sections explain the various sources of financial capital, including credit and saving behaviours in Swat.

5.6.1 Remittances

During the survey I observed that households receiving foreign remittance had more physical assets like computers and televisions, particularly if they were urban based. Moreover, better input management by these households was also observed if agricultural production was a complementary source of income. Table 5.8 provides details about different sources of income and transfers (other than regular household income), and their quantitative classification. A sizeable 50

households received foreign remittance, and nine received money transfers from other cities; these income sources were not affected by the conflict. Only eight households reported getting one-time government assistance, 26 got financial support from NGOs during the resettlement phase, while six reported receiving zakat (public assistance) regularly. This information and other data about receiving government assistance for agricultural revival in section 5.4 will back up the discussion about the limited reach of post-conflict resettlement and rehabilitation assistance in Chapter Seven.

Table 5.8: Source and Annual Money Transfers in Swat- (Pak. Rupees)

<i>Sources of Transfers</i>	Freq.	Mean	Minimum	Max	Std. Dev.
Foreign remittance	50	84,260	12,000	300,000	63,979.8
Domestic remittance	9	47,111.1	20,000	100,000	30,168.0
Allowances	3	10,333.3	60,000	150,000	4,509.2
Public assistance post - conflict and floods	8	12,437.5	2,000	25,000	9,619.3
NGO cash assistance	26	19,138.6	2,000	36,000	7,330.1
Rent-Land/commercial property	19	52,400	3,000	200,000	5,3730.5
Rent-House	20	33,380	1,000	150,000	42,015.1
Rent-Machine/vehicle	2	14,000	10,000	18,000	5,656.8
Zakat	6	11,166.6	2,000	15,000	5,115.3
Other sources	14	9,500	1,000	25,000	8,748.6
Total	157^a	69,478.6	1,500	474,000	81,726.6

a: Total households who had remittances/transfers in the 1 year period were 103, and 54 households had more than one form of transfer.

Source: Author's field survey in Swat

5.6.2 Credit

Examining research focused on poverty, DFID (1999) found that financial capital and the availability of credit are least accessible to the poor. This shortcoming further enhances the significance of other forms of capital to them. Precise understanding of the reasons for seeking loans provides a better explanation of the characteristics of credit and its role in pursuing livelihoods. Among the 275

sample households in Swat, 205 (74.5 percent) needed and took credit in the post-conflict year for varying reasons. Table 5.9 describes these reasons in detail. Relatives, friends and neighbours, in order, constituted the biggest source of loans for 87.3 percent of households in Swat. Shirazi and Khan (2009) note that Pakistan has few credit-supplying sources for the poor, which explains the need to seek loans from individuals, in the wider family: or from people known well by the loan-seekers. Further, it is very difficult to get credit during times of shock and displacement from any available formal credit sources. Credit markets often ration out low-income households, access to the credit markets decreases, and informal lending also drops (Ibanez & Moya, 2006).

Explaining the major purposes of loans, more than 53 percent of households reported that loans had been taken to meet daily household expenses. This is in line with the low savings and income figures presented in the next sections. Negative impacts of conflict on income and employment constituted the reason for more than 75 percent of households, to seek credit as a means to sustain their livelihoods. It is represented in the first five categories of Table 5.10, explaining reasons for seeking credit. Moreover, more than 36 percent of households reported the short-term availability of credit among its disadvantages, while about 27 percent of respondents said that getting credit was not easy. This is despite the fact that the majority got credit from informal sources such as social relationships including relatives, friends and neighbours, but in the post-conflict period even getting credit from these flexible and trustworthy sources was reported as more difficult.

5.6.3 Savings

Among the modes of savings, buying property like land or shops was reported as the preferred choice. This is a usual phenomenon in Pakistan, where interest rates for money kept in formal financial institutions are traditionally very low, and people choose other forms of savings. The survey observed that households who preferred to keep savings in banks were usually getting remittances from abroad. Less than one percent reported being members of committees at community level, which are a traditional source for keeping savings. Figure 5.6 next provides details, and the most significant outcome of this section was that close to 80

percent of households reported that they never had savings. This information was useful in the simulation modelling where labour in tourism businesses is treated as wage labour, rather than people setting up small businesses themselves (owner-operators). The large number of ‘never had savings’ supports the view that workers will be mostly wage workers, since they are likely to have difficulty setting up their own businesses, given their saving behaviour.

Table 5.9: Sources, Purpose, and Disadvantages of Loan

<i>Sources</i>	Frequency	Percent
Bank	15	7.3
Money lenders	1	0.5
Relatives	108	52.7
Neighbours	14	6.8
Friends (Social relationships)	57	27.8
Other sources	10	4.9
Total	205	100

Major purposes for seeking credit

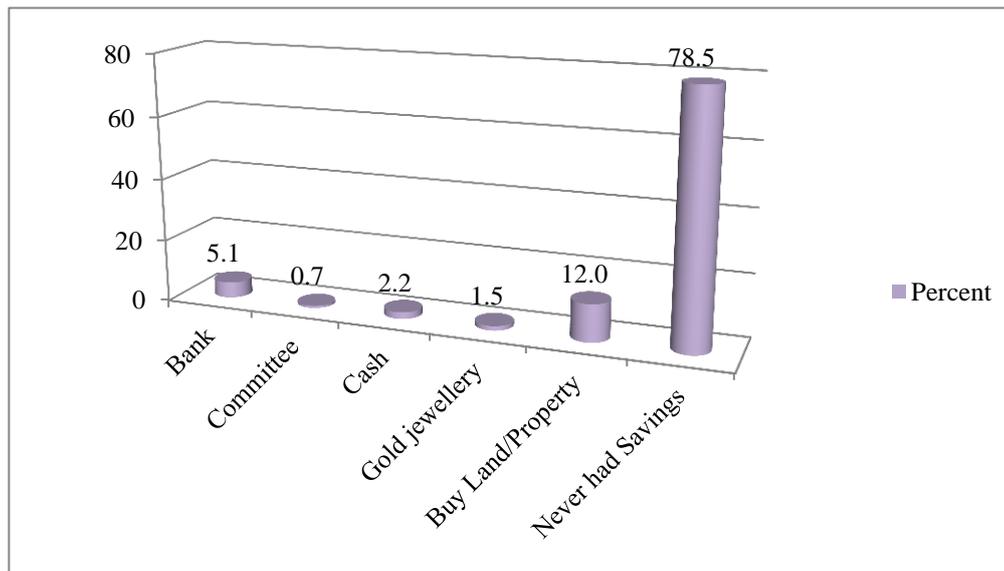
Daily household expenses	112	53.1
Agricultural inputs	18	8.5
Repaying some other loan	9	4.2
Educational expenses	3	1.4
Health expenses	17	8
Buying land	4	1.9
To repair or buy a house	8	3.8
Running or starting a business	23	10.9
Occasions (marriage, death etc)	17	8
Repaying some other loan	9	4.2
Total	211	100

Disadvantages of credit

High interest rate	12	6.1
Is for short term	71	36.2
Limited amount to utilize	27	13.8
Not easy to get	52	26.5
Condition to pledge	1	0.5
Any other	33	16.8
Total	196	100

Source: Field survey in Swat

Figure 5.6: Savings Behaviour of Households in Swat



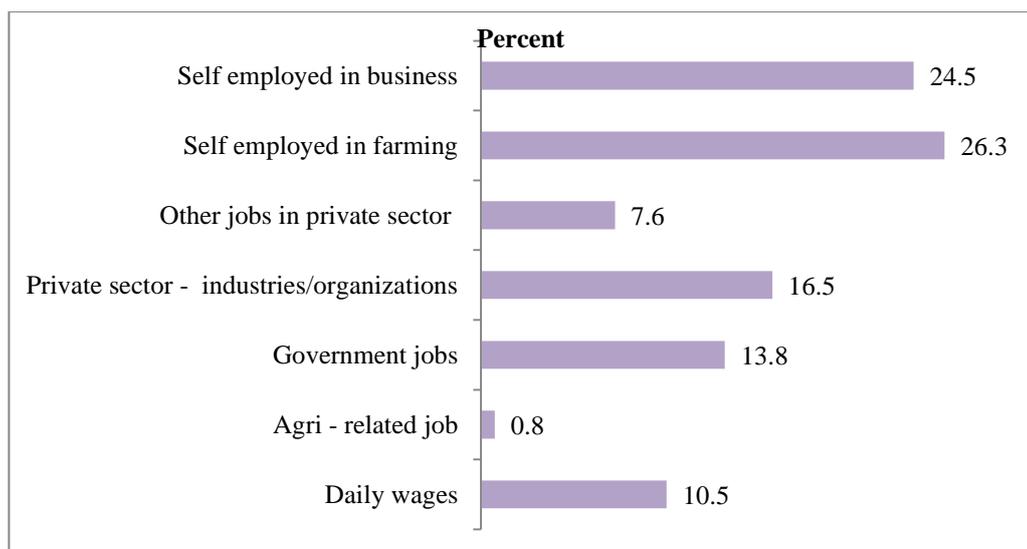
5.7 Income and Employment Structure

Figure 5.7 provides details about occupational choices of household members. About 26 percent were self-employed in agricultural activities and it remained their only income-earning source. However, more than 60 percent of households reported ownership of agricultural land. Thus, agriculture represented a major or a complementary source of income for 60 percent of the sample households in Swat, and was a choice for livelihood diversification. Similarly, complete engagement in small businesses accounted for around 24 percent of household working members. This finding conforms to the structure of Swat’s economy, mostly relying on agricultural and tourism-based activities. These sectors also create most salary or wage based jobs, however, these jobs are mostly informal and without contracts or other associated employment benefits.

Table 5.10 shows that agricultural annual income was the lowest in post-conflict Swat. The earlier findings in section 5.4 and in Table 5.4 provide the explicit reasoning, where more than 96 percent of households reported losses in yields and farm production, which directly resulted in post-conflict low agricultural incomes. Households having income from salaries and regular wage income had the highest average income earnings. These included households with income from foreign and domestic remittances. Many people from Swat work in Middle Eastern

countries but because of their lack of higher education or other skills are mostly involved in low paid, labour-intensive activities. During the surveying process it was also observed that households with foreign remittance usually had diversified livelihood patterns, including agriculture and waged employment of household members locally.

Figure 5.7: Employment Patterns of Household Members in Swat



Source: Field survey in Swat

Table 5.10: Annual Household Income from Main Employment Categories in Swat (Gross - Pak. Rupees)

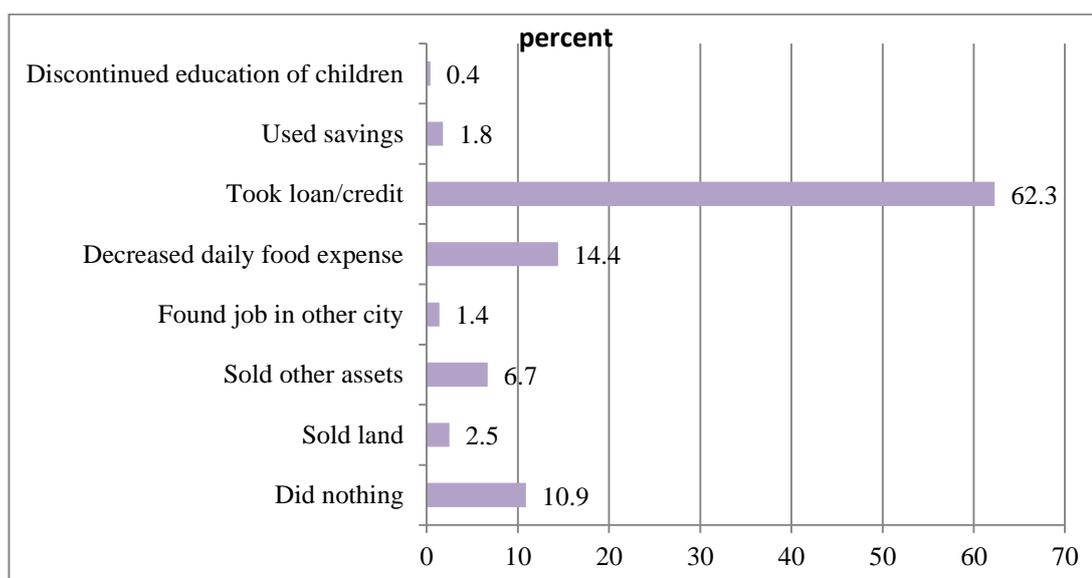
Income source	Mean	Minimum	Maximum	Std. Dev.	Observations
Agriculture	82,945.2	3300	572,700	80,799.5	168
Business	248,897.6	12000	840,000	167,308.4	82
Salaries and wage income	316,946.9	30,000	1632,000	250,594.1	147

a) 1 US \$ = 88 PKR- Source: Author's field survey in Swat

In response to questions about income changes in the post-conflict year, 78.3 percent reported a decrease in income. Moreover, 57 percent were unable to meet household expenditure with their own income and required extra money on more than four occasions to overcome the income-expenditure gap. Around 30 percent needed more money more than once in the post-conflict year, and only 11 percent

did not feel such need. Figure 5.8 shows the strategies adopted to overcome the income-expenditure gap. Taking credit was the preferred option, while other approaches included the sale of physical assets and land, and decreased food expenditure.

Figure 5.8: Post-Conflict Income Coping Strategies of Households in Swat



Source: Field survey in Swat

5.7.1 Consumption

The interviews sought details for weekly expenditure on basic food items. These included details for the 11 most common consumption items in the local context.

Table 5.11: Consumption Expenditure of Households in Swat (Pak. Rupees)

Category	Mean	Minimum	Maximum	Std. Dev.	Observations
Monthly food expenses	16,640.5	3,200	40,500	5,478.9	275
Yearly food expenses	199,686.1	38,400	486,000	65,747.1	275
Yearly non-food expenses	52,815.3	0.0	318,000	38,355.3	275
Other annual consumption	46,075.1	800.0	544,400	62,791.9	275

a) 1 US \$ = 88 PKR - Source: Field survey in Swat

Further non-food expenses, for which there was a detailed list, were also collected. These had two parts: the first one dealt with mostly those goods that a household regularly bought on a monthly basis. The other included goods and items which may be a once or twice per year expense. Table 5.12 above provides a summary of consumption expenditure for households in Swat.

5.8 Education and Health Expenditure

Supplementing human capital data, detailed information for educational and health expenditure in the post-conflict year was collected. Primary public education is mostly free of tuition costs in Swat. However, access to such facilities is difficult, particularly in remote mountainous and hilly areas. In addition, damage to and destruction of schools made access more difficult. Secondary and higher education including college level and any professional education are not free of tuition and other costs. For students living away from main urban centres these costs involve transport and accommodation expenses that make such education expensive and unaffordable for many households. According to Table 5.2, which reports participation and educational attainment, just 13.1 percent of households' educated members had been attaining higher education. The survey result reported that there were no changes in pre- and post-conflict educational expenditure for about 17 percent of households, less than 1 percent reported decreased expenses, while about 82 percent of households had increased educational costs.

A similar situation exists for health facilities. Access to public health infrastructure involves a lot of waiting time, and often public healthcare centres lack facilities. Medical practitioners, medicines, and associated requirements were barely available in the post-conflict era. People had to opt for private health facilities, which are costlier in Pakistan. For health-related expenditures, and these included medicines, visits to doctors, hospitals or stay in hospital. For pre- and post-conflict periods, 2.1 percent reported a decrease, 5.1 percent said there had been no change for them, and about 93 percent reported an increase in their household's health costs. This closely reflected reality, as seen during visits, in the visible infrastructural destruction and marginal operation of public health facilities in different areas of Swat. Either these lacked staff or were closed in the

post-conflict period. Table 5.12 provides details about education and health costs of the households surveyed.

Table 5.12: Annual Educational and Health Expenditure of Households in Post-Conflict Swat (Pak. Rupees)

	Mean	Minimum	Maximum	Std. Dev.	Observations
Educational expenditure	6,981.3	400	50,000	6,520.5	233
Health expenditure	34,379.2	950	449,450	51,291.7	275

Source: Field survey in Swat

5.9 Conclusions

This chapter explored the household demographics and the various capitals that households possessed in the post-war Swat district. The quantitative household characteristics and findings increased understanding about the research areas and strengthened the foundations for the livelihood analysis. ADB and World Bank (2009) estimated that 140,000 households were displaced from Swat district. This study calculated that mean household size was 8.3 in the sample population. If this household size of more than eight is assumed for the whole district, then more than 1 million people of Swat, or 64 percent of the total approximate population of 1.8 million⁷⁰ in the district, had to leave their homes. They stayed either in temporary refugee camps, in rented homes, or with relatives and friends. The United Nations High Commission for Refugees (UNHCR) (2009) in its report on Pakistan estimates that 1.1 million people were uprooted from their homes by mid-2009 (at the peak of civil war in Swat).⁷¹ This study's estimate for the total number of displaced is quite close to that of the UNHCR reports. The data also revealed that the male to female ratio is quite high in Swat as compared to the provincial ratio. However, the available provincial household ratio is for 1998; a recent comparison is thus difficult to make.

⁷⁰ The estimated figure is from the Centre of Public Policy Research's profile on Swat district published in 2010.

⁷¹ UNHCR further reported that during the same year (2009), 2.7 million people registered with the government as having left their homes, from Buner, Lower Dir and Swat districts (the active war zones)

Fewer employment opportunities for educated household members was also one of the findings of this study. This finding is of interest in the simulation analysis presented later, showing the flexibility for households to transfer surplus, or underpaid labour across other livelihood activities without affecting the current employment patterns, if relative profits change across the sectors. The basic literacy percentage of around 72 percent of household members could be a positive factor for labour adjustment in other sectors.

This study found a very high percentage of approval (opposed to the Taliban's views) regarding female education and about girls' rights to attend formal schooling, in addition to getting Islamic religious education. This finding has implications for further support or recruitment to the Taliban in terms of agreement with their ideological views. This finding makes it plausible to argue that recruitment at the rank and file levels of the Taliban cannot be solely on an ideological basis: income and employment are factors which cannot be ignored.

Regarding social capital, the patterns of horizontal and vertical social linkages reveal more trust and reliance on family, friends, and other relatives. Among associations with more formal groups, affiliations of more than 40 percent with political parties are quite significant in the mostly rural settings of the survey areas. Moreover, affiliations with political parties are likely to increase if the democratic process in Pakistan remains uninterrupted. The survey questions did not ask about the name of the party with which the household was affiliated. But if affiliations are with those political parties which oppose the Taliban's style of governance, this could be a possible future barrier to recruitment as militants.

Concerns about losses of natural capital and the degradation of natural resources are very high, particularly with regard to yield losses and increased input costs for post-conflict agriculture activities and production. This finding provides a logical explanation for the low post-conflict income from agriculture. It was observed during field visits that both the military and militants damaged orchards and crops, resulting in losses to production and income to the largest income-earning source of households in Swat.

A vulnerable situation exists regarding ownership of physical assets. Except for mobile phones and radios, which 94.5 and 74.9 percent of households respectively own, other useful household productive assets were either not owned or else marginal percentages reported ownership. This particularly applied to the agriculture-based productive assets in the listing, most of which do not have a high price in the markets. For example, not having machines like insecticide sprayers, and missing timely pesticide control actions, can result in crop damage and yield loss. Major losses to assets occurred during the conflict and households later had to sell further assets. Low income, particularly from post-conflict agricultural production and tourism-related businesses, can be regarded as a major constraint for asset accumulation. The livestock sub-sector that traditionally serves as a complementary income source was worst affected. Few households reported livestock ownership during the survey.

Regarding credit and savings behaviours, some significant facts are presented. More than 74 percent of households took loans in the post-conflict year and among them more than 53 percent required loans to meet daily household expenses. Relatives, friends, and other people with close relationships, like neighbours, remain the major sources of credit. The low income and comparatively high expenditure in the post-conflict year did not result in any savings, and around 80 percent households reported having no savings.

Agricultural income was the main (and only), source of funds for more than 25 percent of households. It was the highest reported income source, but it also had the lowest earnings (in the post-conflict year), compared to other sources. The devastation of lands and orchards and less available financial capital to invest in agricultural inputs were apparent reasons for the low agricultural income in post-conflict Swat. The mean household food expenditure was more than double the mean agricultural income. Opting for credit, selling assets, and decreasing expenditure on education and health were reported as strategies to fund basic household expenditure. On a suggestive note, this finding potentially stresses the need to revive agriculture. If agriculture is not revived with result-oriented policies, unemployed or low paid workers may develop motivation to join the militants. The revival of agriculture and related questions will be further probed in

the simulation modelling. The simulations will examine the likely impacts of growth in agriculture on wages and employment in the main sectors of Swat's economy.

Post-conflict households had very high health expenses; 92.7 percent reported increases in health expenditure. These included visits to medical practitioners, purchase of medicines and expenses involved in hospital stays. Destroyed and damaged public health infrastructure and reliance on expensive private facilities are plausible explanations for the increased expenses. A displaced population has more likelihood of disease transmission in the refugee camps. Malnutrition, and the breakdown of health and social services, further worsens health conditions. Households with savings had to spend them on medical costs, but since savings, as found in this research, were often not available, reliance on other survival options as mentioned earlier, were the strategies of the affected households in Swat.

The conclusions in this chapter help to clarify and develop questions. For example, infrastructure damage in the areas of health and education has significantly increased household expenditure. Infrastructural development is thus crucial to decrease household expenses, and to provide increased earnings from different employment sectors. Daily wage work mostly was dependent on tourism-related businesses and construction work, which were severely affected by the conflict. Infrastructural development can positively enhance job creation. If the percentage of people attending higher education and various skill-enhancing training increases, then more educated and skilled people can have options like moving to other sectors like tourism, within or outside Swat. These developments can enable households to successfully pursue their known livelihood strategies, and avoid falling into the poverty trap. The insights from this chapter are helpful for the next, focusing on how asset accumulation helps the adoption of various livelihood options. The combination of this household analysis and the effects of the five capitals on livelihood strategies will form the theoretical framework for the simulation analysis of labour allocations that later answers the final key research question.

Chapter Six

Livelihoods and Post-War Legacies in Swat

6.1 Introduction

Violent civil conflicts have multiple direct and indirect implications that strongly affect households' livings, resources and assets, both during the conflict and for many years thereafter. The forced occupation of Swat district of Pakistan by the Taliban and subsequent civil war involving government forces and the militants was no different. Civil war ravages, but in which dimensions? Answers to such questions are more relevant when focussed by analysing a particular civil conflict and its aftermaths. Such efforts may be difficult: not every war zone is friendly to outsiders. Data collection and even visits to the sensitive areas sometimes are not allowed by government forces, and risks are associated with the likely presence of rebels. The emerging conflict literature, studying directly affected households and the micro impacts of violence, represents brave attempts to break such barriers to allow data collection in difficult circumstances. This micro approach focuses on region-specific analysis and emphasises the micro perspectives of violent shocks. These research efforts are likely to emerge as very relevant post-conflict studies.

With this background, this chapter explores the third key research question of the thesis: how do the economic shocks caused by violent conflict affect the household asset endowment and impact household choices of post-conflict livelihood portfolios in Swat district of Pakistan. The study of Swat is worthwhile as there has been a gap in research exploring this recent hotbed of violence and the resulting post-conflict livelihoods. This chapter centres on the micro aspects of asset losses to households and analyses livelihood constraints and choices in the immediate post-war economy of Swat. This study on post-conflict livelihoods in Swat, applying household data and an econometric approach, is a pioneering analytical attempt to study the conflict in Swat involving the Taliban and state forces.

As an initial step in the livelihood analysis, the sample households are segregated into groups according to their major income sources. This classification uses the information collected during the household survey in Swat. A statistical cluster

analysis is performed to validate this household classification. Clusters group individual household observations in distinct livelihood selections. The role of different capitals (human, financial, physical, social and natural), in the post-conflict environment is investigated, as capitals decisively shape livelihood strategy choices. Livelihood strategies are distinct and can vary with given asset portfolios, thus for econometric analysis, which contains multi-category response variables, a multinomial logit model is used. Results and conclusions from the livelihood strategy analysis will inform the simulation model in Chapter Seven, which focuses on changes in labour allocations in the post-conflict economy of Swat. Further, these results help in suggesting credible and effective development interventions, targeted to improve the livelihood outcomes for conflict-affected households in Swat. These include infrastructural services development which may enhance livelihoods in the post-conflict regional economy.

6.2 Micro Analysis of Violent Conflicts

Violent conflicts are different from other external shocks: armed civil conflicts are regarded as endogenous to household behaviour. This particular characteristic makes conflicts quite different from other external shocks (Justino, 2009). In another study, Justino (2006) highlights that ignoring the fundamental role of individuals in conflict-related studies and even in conflict resolution strategies is an inadequate compromise. She observes that such shortcomings prevail in more extensive investigations of the livelihoods of individuals and their families in the absence of systematic data sets and detailed information on the context of conflicts. To document household post-conflict effects, Justino and Verwimp (2008) focus on Rwanda, a central African country that witnessed civil war and genocide for more than a decade, and probe household income and poverty. Their study concludes that previously land-rich and affluent households suffered income and welfare losses, including severe damage to houses and land, which decreased incomes per adult in the households. It also uniquely identifies that female-led households were more severely trapped in poverty in post-conflict situations.

Badiuzzaman, Cameron, and Murshed (2011) identify households' livelihood decisions, particularly investment in children's education and cropping patterns, as a proxy for production–investment decisions in rural areas of post-conflict

Chittagong, Bangladesh. They conclude that increased perception of violence lowers the food and non-food consumption expenditure of households as a risk reduction strategy. This study observes the presence of a post-conflict, 'phoenix'-type factor that affects income-based livelihood decisions, which are made under fear of renewed violence. This post-conflict phoenix factor operates for both short term and long term livelihood decisions. It results in increased land use and cash crop cultivation in the long term through efforts to increase human capital. The study concludes that such strategies may not avert the risks associated with conflict situations. Market prices of cash crops can be uncertain and may fall as these are more vulnerable to diseases, and returns from schooling years can be years in the future and depend on demand in the local labour markets. Similarly, Bozolli and Bruck (2009) identify the determinants of income and consumption for war-affected rural households in Northern Mozambique.

In comparison, Douarin, Litchfield, and Wheeler (2010) probe the immediate post-conflict effects in rural Kosovo, and focus on how conflict alters the livelihood choices and overall welfare of affected households. The authors observe the effects on social and physical capital. They note that reliance on social networks becomes difficult as neighbours and friends are experiencing similar stresses and shocks. Further, the selling of physical assets provides limited returns when markets are flooded with goods, with other households doing the same. They suggest significant long term post-conflict interventions other than relief such as social assistance, which acts as a short-term tool. Their study stresses the need for long term post-conflict interventions such as rebuilding infrastructure, providing access to basic development outcomes and creating economic opportunities so that livelihoods can be rebuilt and strengthened again.

Displacement is usually a factor in violent conflicts. Ibanez and Moya (2009) investigate post-conflict impacts on displaced Colombian households and argue that structural poverty strongly correlates with an insufficient asset base. They note that conflict resulted in heavy asset losses in the displaced population. In contrast the existence of a strong asset base is a good determinant of upward mobility. Displaced households leave behind physical capital, natural capital becomes vulnerable (particularly crops and livestock), and access to any available

credit markets declines. Besides deterioration in all kinds of capitals, the displaced population finds it enormously difficult to enter new labour markets. Displaced households lack formal references, assets or collateral, and thus credit is constrained. The study also indicates that recovering from shocks does not occur naturally with marginal initial conditions like lack of assets and restricted access to financial markets. Bozolli, Bruck, and Wald (2011) study the effects of conflict on self-employment and behaviour in the labour markets of rural Colombia. They find that high homicide rates and displacement from original habitats reduce self-employment, particularly for those with self-employment in agriculture. Another significant aspect emerging from displacement is that people seek refuge or asylum in other countries. Zimmermann and Zetter (2011) highlight the lives of Somali refugees in two host countries, the United Kingdom and the Netherlands. Refugees, they argue, have social pressures originating from connections in their host country, and exile, alongside social problems including drug use and divorce, leads them to economic exclusion and poverty.

In a survey-based study, Gupte, Justino, and Tranchant (2012) identify the determinants of civil rights victimization in Maharashtra, India. The authors conclude that victimization is more common and severe in economically vulnerable households that have less community support and weak social interactions. Justino, Leone, and Solardi (2011) probe the aftermaths of conflict spanning 25 years, focusing solely on human capital in Timor Leste. They find a negative impact of conflict on primary school completion and a substantial long-term loss of human capital among young males. The loss results from households' investment trade-offs between education and fundamental survival during 25 years of Indonesian occupation and violence.

Instead of focusing on households, Humphreys and Weinstein (2008) identify the determinants of participation in civil war with micro level data in Sierra Leone. Arjona and Kalyvas (2009) focus their research on individuals to analyse the counterinsurgent phenomenon in Colombia. They compare the rebels, who fight against the state, and those individuals who decide to fight against the rebels. The authors find these areas with weak state institutions and less capacity to deliver public services prompt more counterinsurgent recruitment. This conclusion is

similar to the phenomenon observed during the recent violent conflict in Swat and in the current active conflict zones of Pakistan. A common strategy adopted by state institutions, particularly the army, is to induce local people to organize and fight against the Taliban in tough terrains or in areas having minimum public institutional strength.⁷²

The micro conflict literature discussed above focuses on different war zones and multiple post-conflict repercussions for households and affected communities. These studies develop insights into the impacts on households in different war zones. These explain determinants of household well-being (the asset base), and establish that the capabilities of the vulnerable are severely affected when violent shock confronts households. Survival strategies become ineffective, and losses in capitals (human, physical, financial, social and natural) are not merely for short periods. With a limited capital base the likelihood of a household falling into the long-term poverty trap substantially increases. Displacement further aggravates unemployment, losses in education, health status and even food consumption. After returning home, asset-poor households without effective exogenous development and income-generating initiatives find it quite difficult to regain even their pre-conflict income earning potential.

Identifying the gap in the literature on post-conflict livelihoods in Swat and contributing to micro conflict-based research, this study exclusively focuses on the role of the five core capitals in determining livelihood choices in post-war Swat. This study adopts the approach of identifying household livelihood choices via survey data using clustering techniques and probes the effects of asset endowment on livelihood choices and diversification options. The analysis in this chapter aims to understand post-conflict livelihoods and legacies, using primary household information from the war-torn Swat district. The Taliban occupation, with its militant Islamic ideology, re-shaped and altered the balance of power. It was the first forced occupation of its kind, which aimed to enforce solely sharia law regionally, thus creating a mini-state within the state system of Pakistan. It severely constrained people's assets and affected their abilities to sustain livelihoods in the altered economic and social systems. The Taliban, as discussed

⁷² Such fighting groups are called *Lashkars* (fighting groups) or *Aman* (peace) committees

in the previous chapter are opposed to education, and totally opposed to education for females. They burnt and destroyed hundreds of schools, and in Swat announced that female schools would be closed forever. Along with other determinants, this chapter explores the links between educational attainments and livelihood choices in the post-conflict district. The displacement of the population from Swat and adjoining areas was on an enormous scale⁷³ (ADB & the World Bank, 2009). At the time of data collection, although most had returned, residents were struggling to achieve gainful livelihood outcomes. This study attempts to grasp the role of assets, alongside the nature of the constraints faced during the immediate post-war re-settlement phase, in making gainful livelihood choices in Swat.

6.3 The Livelihood Strategy Concept

Livelihood strategy is a portfolio of activities and choices that people make to achieve their livelihood objectives, including productive activities, investment strategies, management of assets and reproductive choices (Jansen et al. 2006). The choices people make are associated with how they use their assets, so this becomes an important part of household behaviour, and determines their well-being. Ellis (2004) observes that there is wide agreement in the literature that secure livelihoods are dependent upon substitution capabilities among assets and livelihoods. A low substitution potential makes livelihoods more vulnerable, particularly in times of crisis and in coping with shocks. Assets are the building blocks upon which households undertake production, engage in labour markets, and participate in reciprocal exchanges with other households.

The conceptual foundation of the livelihood strategy choice originates from the utility maximization rationale (Brown, Stephans, Ouma, Murithi & Barrett 2006; Khan, 2008). It assumes that in a given time period, rational households choose among various mutually exclusive feasible income-earning alternatives,⁷⁴ with a set of given asset endowments, seeking to maximise their utility, where activities $i = 1, \dots, N$. Then a simple revealed preference argument suggests that, where income distributions depend upon asset distribution, these can be ordered in

⁷³ The scale of displacement is discussed in more detail earlier in Chapter Three

⁷⁴ The behavioural notion of the model is that households in the research areas of this study (Swat district) are rational decision makers.

welfare terms following stochastic dominance criteria (Shalit & Yitzhaki, 1994).⁷⁵ Households choosing a low income livelihood activity face constraints, limiting that particular household's choice sets relative to those available in high return activities. Identifying low return activities and why households choose them is critical in understanding the dynamics of poverty.

DFID (1999, 2000) provided the conceptual foundations of the sustainable livelihood framework (SLF) that was explained in detail in Chapter One. A very brief explanation of assets and vulnerability context is provided here. This framework identifies five core assets or capitals on which livelihoods are built. These include human capital including age, education and family structure; natural capital (e.g., land, climate and water); physical capital (equipment, tools, other facilities and access to public infrastructure); financial capital (credit, savings and transfers) and social capital (social resources, relations, affiliations and associations). The livelihood strategies in the SLF determine the use of land and labour allocations, investment in education, migration decisions and participation in strengthening social resources.

The vulnerability context in this framework is the environment in which people exist. It has two aspects: one is external (the stresses and shocks that people have to face); the other is internal (the ability to cope and manage). Stresses are pressures, which are typically continuous and often predictable, such as seasonal shortages, rising population and declining resources. Shocks are unpredictable, and often traumatic and sudden, including fires, floods, earthquakes, diseases and civil violence (Chambers & Conway, 1991). Sustainable livelihoods are those that are able to avoid or resist the stresses and shocks or have the ability to bounce back to their previous state.

A number of studies are based on the sustainable livelihood framework, and analyse household decisions with certain asset endowments. Notable examples are Alwang, Jansen, Siegel and Pichon, 2005; Jansen, Pender, Damon, Wielmaker &

⁷⁵ This refers to the utility maximization phenomenon which states that when a portfolio is selected, say A or B, where B has more utility or returns, everyone in a given setting would prefer to move from A to B, so B is second order stochastically dominant.

Schiffer, 2006; Ellis & Bahigwa, 2003; Ellis et al., 2003; Iiyama et al., 2008; Khan, 2008 and Tuyen & Lim, 2011.⁷⁶

6.4 Identification of Livelihood Strategies

The first step in livelihood strategy analysis is to categorize or group the households. The formal definition of the clusters or groups is done mostly in an intuitive manner (Everitt, Landau, Leese & Stahl, 2011). Bonner (1964) suggests that the ultimate criterion for evaluating the meaning of such terms is the value judgement of the user. The choice of a particular group is not clear cut and depends upon knowledge of the subject matter and data-based appraisals. Livelihood diversification strategies can be represented in numerous ways as Barret, Daniel and Reardon (2006) identify - by Hefindhal or Simpson indices, Gini coefficients, asset portfolio returns, or asset distribution. Alternatively, groups can be classified by examining the time-based intensity for different livelihood activities (Lopez, 2008).

The central idea in group-based identification is that there are common features that enable the agglomeration of individual observations into small groups based on similarity along pre-determined dimensions (Brown, et al., 2006). Items (or variables), or people in each cluster are similar to each other and contrast with those in other clusters. A common statistical technique for identifying such groups is cluster analysis, which is similar to factor analysis except that rather than grouping variables into a smaller set of factors, cluster analysis numerically groups people. It is based on their characteristics, and responses to various variables, and upon the similarities and differences in these responses (Field, 2009; Johnson & Wichern, 2002).

Several studies of the classification of livelihood strategies use the share of income as a group characteristic originating from various sources as a baseline criterion. For example, Barret et al. (2001) examine rural African households, and Iiyama et al. (2008) focus their research on rural Kenya. Woutrese and Taylor (2007) find income diversification evidence from Burkino Faso; Alwang et al. (2005) study livelihoods for three central African countries. Dercon and Krishnan (1996) probe household characteristics and barriers to entry into higher return

⁷⁶ See more references in section 6.4

activities in Tanzania and Ethiopia, while Lopez (2008) analyses livelihoods in Ecuador, and Tran and Lim (2011) observe livelihoods in peri-urban areas of Vietnam. Some disagreements exist over income-based grouping: for example, Brown et al. (2006) suggest direct examination of households' asset endowments for analysing livelihood strategies. They consider the income earned and the type of activity undertaken by a household as a function of the assets it controls. Their argument, however, ignores the work of Dercon and Krishnan (1996), which suggests that an important determinant of income is the comparative advantage of households in particular activities, which results in higher outcomes. As a practical example, in farm-based activities, two farms of the same size, even with the same crops, may give different yields, depending upon farm management practices. The decisive factors could be the type of seeds used, or better timing practice for farm inputs like water, pesticides and fertilizers. In addition, household and village characteristics will also influence the income output with more or less similar asset portfolios. The livelihood classification in Swat for this study is first made using shares of income from one or more sources and from the total household income, calculated from the survey data.

6.4.1 Livelihood Strategies in Swat

The information collected during the field survey reveals that significant numbers of household members in Swat are involved in more than one income-earning activity. In addition, household members engage in different income earning categories. Table 6.1 provides details about the involvement of households in one or multiple income earning activities and their frequencies. About 68 percent earn income for involvement in one major activity, and about 30 percent diversify their labour and resources in at least two activities. Among the households with remittance as an additional source of income, the other adult working members were engaged in agricultural production, either for domestic use or as commercial farming activity, particularly orchard farming which is a high income based livelihood option. Similarly, some households reporting salaries from public sector jobs also reported engagement in farming activities.

Table 6.1: Number of Household Income Earning Activities in Swat

Number of Income earning activities	Frequency	Percent
One	188	68.4
Two	82	29.8
Three	4	1.4
Four	1	0.4

Source: Author's field survey in Swat

Based on the quantitative description of income sources in the survey data, households are categorised into five major income and labour-specific strategies. Table 6.1 shows that about 30 percent of households were involved in at least two income-earning activities. Therefore some criterion needed to be established by which the major percentage of income from a particular livelihood choice classified the household as belonging in that particular livelihood group. Following several studies using income-based criteria for cluster classification as mentioned earlier in section 6.4, and following the numerical share approach of Lopez (2008), households with 60 percent or more total income from one source are classified into that dominant livelihood group. Households' remaining 40 percent of income in that classification may be earned from diversified livelihood patterns. This criterion identifies the major income-earning strategies for households in Swat. These strategies are: self-employed in agriculture; self-employed in business/trading; and formal wage employment that includes jobs in the public sector. Private jobs which include jobs in other cities or countries, and households that rely on daily wages, form an informal sector, which is without regular employment contracts. Table 6.2 summarizes the explicit employment classification for each livelihood group.

Table 6.2: Household Employment Classification in Major Categories in Swat

Major employment category	Subcategory	Description
Agricultural production	Cash and staple crops	Fruit and vegetable farming and production of wheat, rice and maize
Self-employment in business	Ownership of retail shops and services including production activities	Retail stores for consumption goods, trading and service including tourism based businesses like hotels and restaurants, taxi drivers, handicrafts etc.
Formal jobs	Jobs in the government sector	Stable wage work, had the least impact on overall income during and after conflict. People in teaching, working in government offices, hospitals etc.
Private sector jobs	Jobs in different sectors, usually less paid locally than public jobs, also includes remittance from within and outside the country	Jobs in private factories and organizations, in other small business activities, NGOs
Daily wage work	Work without formal contracts and employment benefits in different sectors	Labour work in construction, tourism, services and agriculture, on daily wage basis

Source: Field survey in Swat

To assign households into different livelihood groups, employment classification using the dominant income sources given in Table 6.2 was carried out. Among the sample households, three with multiple income sources did not meet the 60 percent income source criterion, and were classified with the biggest income source as the dominant livelihood strategy. It was possible to use this classification with the survey data as total monthly salaries of household members in cases of wage employment were recorded. Similarly, for self-employment in business, quantitative information for all expenditures and income were collected to calculate the monthly profits. For agriculturally-based earnings, it is usually easy for farmers to recall the quantity and value of produce for different crops cultivated as there are not many in a yearly production cycle. During the field survey it was observed that the major subsistence crops in a yearly production cycle consist of wheat, rice and maize, while orchard farmers typically rely on apples, peaches, plums, persimmons, and apricots. The income from orchards was

more easily recalled as it was received once a year. All types of relevant expenditure in the local context of agricultural production were recorded, and the resulting profit for each kind of crop was separately calculated.

The household data was further analysed to inform the livelihood classification of Table 6.2. The mean, minimum and maximum income earned during the pre-survey year is calculated and presented in Table 6.3, which also provides quantitative details of livelihood strategy determination and shows annual income, in order of numerically larger strategies first for the pre-survey year. According to the details in Table 6.3, agricultural production is the dominant livelihood choice of 33.1 percent of households; simultaneously the mean levels of income for those households are the lowest. Agriculture was observed during the survey as the most labour-intensive livelihood portfolio⁷⁷ (both for subsistence and cash crops). It provides much subsidiary wage work such as planting saplings, pruning, harvesting, picking, weeding, packing, and drying of fruits. Although orchard farming in Swat historically had high per unit income per jareeb (there are approximately 10 jareeb per acre) as compared to other agricultural crops, the war and later the large scale displacement of households negatively impacted maintenance practices, and affected trees' fruit-bearing capacity and soil fertility. This resulted in low farm production in the post-war year. Self-employment in business constitutes the second major livelihood choice, forming the major income source of about 27 percent of sampled households. Swat, an all year round tourist destination, creates multiple business opportunities for the local population. During the post-war year, there were heavy rains and floods, and these further damaged the economic and physical environment. I observed during the survey that small entrepreneurs were struggling to revive business activities and to regain their pre-war dynamism. Most relied on tourist inflow, which was much less than pre-war years⁷⁸. However, the return of displaced people and resumption in the inflow of visitors including tourists, contributed to some visible signs of business activities.

LS 4 (private sector jobs) and LS 3 (public sector jobs) respectively are comparably high-return income activities. Foreign remittance-based jobs are

⁷⁷ More details in Chapter Seven, section 7.2

⁷⁸ See more details in Chapter, 3, 5 & 7

included in LS 4 as these had no direct war impacts, were uninterrupted, and thus seem to have higher income, compared to other livelihood groups. Similarly, public sector jobs were mostly discontinued during the war period but because of their formal structure this did not result in salary losses, as public servants were later paid salaries by their respective employers. The livelihood strategy (informal work) based on daily wages, showed visible post-war effects on income: the mean returns in this activity are higher than agricultural income, but the maximum returns are the lowest.

Table 6.3: Livelihood Strategies and Annual Income from Major Strategy Choice in Swat (Pak rupees)

Livelihood Strategy (LS)	Obs.	Percent of Sample	Mean	Minimum	Maximum	S.D
Daily wages (informal work)	25	9.1	174,576	48,000	355,200	81,899
LS 1						
Self - employment in business	73	26.6	269,159	60,000	840,000	171,949
LS 2						
Agricultural production	91	33.1	95,018	11,200	572,700	91,587
LS 3						
Public sector jobs (formal)	42	15.2	342,418	84,000	768,000	168,735
LS 4						
Private sector jobs + remittance	44	16	409,590	84,000	1,632,000	354,458
LS 5						
Total HH Income	275	100	260,462	11,200	1,930,000	245,151

Exchange rates at the time of survey are taken as 88 PKR = 1 US \$

Source: Field survey in Swat

6.5 Identification of Livelihood Strategies with Cluster Analysis

Cluster analysis is a statistical data reduction method that summarizes large observations into a smaller number of distinct groups or clusters of observation.

The details and accruing benefits from household clusters or groupings were explained in section 6.4.

This statistical tool was applied to further validate the household classification in Swat. The classification is based upon more than 60 percent of household income being earned from the dominant livelihood strategy. This data partitioning method requires establishing the number of clusters *a priori* (Berhardt, Allen, & Helmers, 1996). Observations at the initial analysis stage are randomly assigned to each of the k-clusters, and then reassigned with an iterative method so that the within-cluster variance minimises and the between-cluster variance maximizes. Mooi and Sarstedt (2011) point out that this method does not require deciding on a distance measure, and it uses Euclidian distances, an extension of Pythagoras' theorem. They further regard k-means as superior to hierarchical methods as they are less affected by outliers and irrelevant clustering variables.⁷⁹

The available household data from Swat adequately fulfilled the fundamental requirement of the k-means: predefining the number of clusters. The data allowed grouping of livelihood groups into five distinct strategies based on major income earning sources. Having this prior knowledge of the number of clusters or groups, referred to as $k = 5$, IBM SPSS software version 19 was used for the cluster analysis to produce different clusters with the greatest possible distinction. The clustering algorithm produced five robust clusters, maximizing the variance between each cluster.

Table 6.4 describes the final cluster centres from the software output. Table 6.4 shows that for households with agriculture as their major livelihood strategy, on average 97.9 percent of their income comes from this source. The average for self-employed business is 92.4 percent, and from public sector jobs as the main livelihood strategy, the average is 86.7 percent. Private sector jobs including jobs in other cities or countries produced 89.5 percent and from the strategy choice of daily wage work (informal work), 99.1 percent of total income is earned.

⁷⁹ Mooi and Sarstedt explain that there are many clustering procedures and many ways of classifying these. The practical distinction is the differentiation between hierarchical (agglomerative clustering) and partitioning methods (notably the k – means procedure). For details see Mooi, E. & Sarstedt, M. (2011). *A concise guide to market research*. 237-284. DOI 10.1007/978-3-642-12541-6_9,

Table 6.4: Livelihood Clusters and Average Income Share from the Major Source

Livelihood Strategy Identification	Number of Households	Share of income from the source
Agriculture	91	97.9
Self-employment in businesses	73	92.4
Government Jobs	42	86.7
Private sector jobs + remittances	44	89.5
Daily wages	25	99.1

6. 5.1 Other Significant Differences between the Livelihood Clusters

The k-means cluster identification of households in Swat was further tested to determine what other significant differences prevailed in the identified livelihood strategies. The aim was to discern whether per capita income, per capita food consumption and consumption including food and non-food, differ among the five core household clusters in Swat. Following Brown et al. (2006) ANOVA tests were performed for the five identified clusters to identify significant household differences between the clusters. The results are presented below:

1. There is a significant difference in per capita income of the five livelihood clusters in Swat, $F(4, 270) = 29.0$, $p < .01$
2. Significant differences exist in yearly household food consumption between the five identified clusters, $F(4, 270) = 4.0$, $p < .05$
3. Total household consumption including food and non-food is significantly different between the livelihood clusters, $F(4, 270) = 6.6$, $p < .01$

The statistical results above explain that in addition to total income, the per capita income of households, yearly household food consumption and total consumption (food and non-food), significantly differ among the identified livelihood clusters

in post-war Swat. These results, clustering five livelihood groups, allow a more detailed livelihood analysis, in which empirical analysis and interpretation of the endowment of different capitals (human, physical, financial, natural and social) is conducted to determine the effects of the choice of different household livelihood strategies in the post-war economy of Swat.

6.6 Empirical Analysis

The effects of asset endowment on livelihood choices are observed in the following sections, using a Multinomial Logit Model (MLM). In this model the livelihood strategies (LS 1.....LS 5) are used as limited dependent variables and as a function of household characteristics. This is the most widely used econometric model for multicategory response variables because of its easier estimation and straightforward interpretation (Cheng & Long, 2007; Fox, 1997). The Probit version of these models is theoretically possible, but as Greene (2003) observes, computation and identification issues limit their use. However MLM requires the independence of irrelevant alternatives (IIA), which implies that choice between two alternatives is not influenced by other available options (Hausman & McFadden, 1984). Cheng and Long (2007) recommend that researchers should refer to an early advice by McFadden (1974) that MLM should be applied where the outcomes can be hypothesised to be dissimilar. In same manner Amemiya (1981) suggests that MLM most suitably operates when the outcomes are distinct. The previous detailed cluster analysis in sections 6.4 and 6.5 distinctively identifies five mutually exclusive livelihood strategies in Swat. The above discussion and as Tran (2013) suggests too, choice of MLM for various quantifying factors affecting household livelihood choice is much plausible. A general formulation of the multinomial model given by Douarin et al. (2010) is:

$$P_j = \frac{\exp(\beta x_j)}{\sum_j \exp(\beta x_j)} \quad \text{for } j = 0, 1 \dots j$$

where P_j is the probability of selecting portfolio j , from a set of $J + 1$ portfolios (here $j + 1 = 5$), and x_j is a vector of variables influencing the choice of portfolio. The parameters β are to be estimated for the reference portfolio, i.e. agriculture in this particular analysis.

On the basis of above, the particular equation used for the forthcoming livelihood analysis becomes:

Livelihood outcomes =

$$\beta_1 \text{Livelihood choices} + \beta_2 \text{Natural capital} + \beta_4 \text{Human capital} + \beta_5 \text{Social capital} + \beta_6 \text{Physical capital} + \beta_7 \text{Financial capital} + \varepsilon$$

6.6.1 Model Specifications

The parameters selected for human capital include household size, which determines labour availability. Household size in Swat, as was explained in Chapter Five, is higher than the national average. The total number of men and women in the working age category (16 to 60 years) further captures the labour endowment in the model. Following Rahut and Scharf (2012) other human capital variables include the mean age of household members aged from 16 to 60 who were employed in the one year pre-survey period. Average educational attainment of the same household group is also included in the model. Studies by Alwang et al. (2005) and Jansen et al. (2006) regard education of the household head as a contributing variable in identifying livelihood strategies. However, in the cultural and social context of this study area, he/she may not be the main earner in the household.⁸⁰ The mean years of education for household members are recorded in some studies (Jansen et al., 2006) but this could improperly reflect the formal educational status of households in Swat district. This is because, as survey data reveals, about eight percent children of both genders either currently are or have been enrolled at madrassas.⁸¹ The proportion of females aged 16 to 60, considered similarly to male labour endowment in labour markets is included. Jansen et al. (2006) identify that in developing countries this female age group influences the availability of non-domestic labour for labour markets. Gender, as Ellis (1998) identifies, is often found to constrain the patterns of income diversification pursued by the household, either directly due to the total or partial prohibition of women working outside the home or indirectly by giving girls less access to

⁸⁰ The household head is the eldest household member in joint families in Swat. In old age they may not be employed but have a decisive role in major household decisions.

⁸¹ Madrassas teach religious education and also provide accommodation and food to those enrolled. The formal educational syllabus is not part of madrassa education. Household members enrolled in madrassas reported this as education, but educational attainment for some members only in religious seminaries and for some in formal educational institutions could not be practically compared in the study area.

schooling than boys. The survey in Swat validated this observation and established its relevance for the study area, as less than 1 percent of female members reported working outside the home in formal employment.

The focus of this study is a war zone, Swat, where physical capital was destroyed or severely damaged. Ibanez and Moya (2009) observe that during periods of conflict, civilians become the targets of armed groups, and such groups either seize assets from civilians or destroy assets, resulting in heavy losses to physical capital. Public utilities and infrastructure such as communications, bridges, electricity supplies and health facilities become the targets of the militants. In a post-conflict era, as Douarin et al. (2010) observed in Kosovo, it becomes very difficult for households to undertake wage labour in a physically damaged environment. Physical capital becomes highly significant in determining livelihood choices. Another study by Alwang et al. (2005) probes the significance of livelihood assets in three Central American countries. They use predictors for physical capital including distance to key facilities and access to paved roads in livelihood selections. Following their approach, but modifying it according to more detailed available information from the field survey, a variable representing scores for household access to various basic public utilities was used. These scores are based on a list of 15 basic household facilities and public utilities in Swat, where access or possession of an asset is assigned a score 1 and the total score for access and use of public and private physical assets is then summed.⁸² This criterion was set to assess uniformity in assets and their availability to sample households. The list contained the basic assets required for sustainable living in Swat. A proper shelter was asked for, as displaced people on return may have been living in temporary accommodation (provided by the government), or with relatives or friends. Assets which were considered out of the reach or utilisation of the sample population were not asked for, such as access to an airport or ownership of a motor vehicle. The scores for households range from 0 to 15. For example, if a household had access to or was using 10 out of 15 assets, it received a score of 10. Another physical capital variable represented the monetary value of the household productive assets, including machines, tools and

⁸² The detailed list of assets is in Section 5.5, Table 5.7 of Chapter 5. Score of 10 among 15 relevant assets in Swat's context is to be quite robust.

other useful household items. Households in Swat were found to have few assets, and the mean values calculated earlier in Chapter Five are quite low. The total asset values in Pak rupees were divided by 1000 to make the unit coefficient values in the MNL model results more meaningful: a one unit change represents a change of Rs.1000 in asset values. A one unit change in the original currency values would be very small and could be difficult to interpret.⁸³

The variables for financial capital are included. Dercon and Krishnan (1996) note that livelihood activities having entry constraints are in the form of special skills and capital requirements. The survey revealed that 41.7 percent of households adopted low return post-conflict livelihoods in agriculture and working for daily wages in Swat. Lack of finances can create entry barriers into high return activities, and it is a hindrance to enhancing human capital. Lack of finance also constrains the adoption of proactive management practices in the farm based livelihood selection, such as timely and quantitatively proper use of different farm inputs and investment on farm care practices. In response to a survey question, households considered lack of finances to be a major constraint on improved outcomes. Barret et al. (2000) conclude that limited endowment of productive assets like land and livestock in rural Africa makes it unaffordable for households to turn to high return activities. This constraint directly relates to lack of financial capital. Following Brown et al. (2006), this study observes the effects of financial capital with self-reported access to credit and receipt of remittance payments.

Social capital is represented differently in studies exploring livelihood choices. For example Alwang et al. (2005) regard it as participation in agricultural organization in Africa, while Jansen et al. (2006) examine membership in different formal groups and organizations. This particular study environment did not find a strong presence of formal groups and associations, whereas horizontal dimensions of social capital are widespread in Swat. Family, relatives and friends are the main source of and hope for financial help and assistance during any household crisis. Variables representing expressions of confidence and trust in many people who can be helpful during any difficult household circumstances,

⁸³ Physical capital as found in Chapter 5 is very low, a unit change in PKR at survey time's exchange rate would make a difference of US\$.01, and with this conversion in the model a unit change is to represent US\$ 11.3, which seems more meaningful.

and confidence in more than three people outside the immediate family who can provide financial assistance in a crisis are included.

Natural capital, like physical capital, is heavily affected during a violent conflict. In a mostly agrarian setting, this becomes more damaging for households relying on agriculture. The displacement of more than one million people from Swat left farms and orchards unattended, while explosives and shells damaged land, crops and fertility. Livestock perished. The availability of canal water, the major source for irrigation,⁸⁴ was compromised. Variables representing natural capital include ownership of land and access to canal water for irrigation purposes. Farm size is used in many studies as a proxy for natural capital (see for example, Barret et. al, 2000; Brown et. al, 2006; Dercon & Krishnan, 1996) but instead of farm size, production patterns like subsistence or orchard farming matter more in Swat. In a largely mountainous area, most farms are of smaller size than in the plain lands of the country. Even the smallest unit, one acre of land, can provide a reasonable income. The specific fruits and off-season patterns of vegetable farming make per jareeb farm earnings better than in other areas. In this context land ownership instead of land size is used in the model. Table 6.5 sums up the description and type of the predictor variables, and Table 6.6 separately presents a descriptive summary of the variables used for each household livelihood choice.

⁸⁴ Other sources as explained in Chapter Five, Table 5.6 include, rain water, tube wells and spring water

Table 6.5: Definition and Measurement of Model Variables

<i>Outcome Variable</i>	<i>Description</i>	<i>Measurement</i>
Post Conflict Livelihood Strategy	Clusters 1 to 5 (Based on major Income sources)	Cluster analysis
<i>Explanatory Variables</i>		
Human Capital	Household size. Total adult members (15-60 years) Average age of the working members. Mean years of education, age 16 to 60 Number of female members age 16 to 60	Numbers, Percentage
Physical Capital	Approximate value of productive assets Access to basic public infrastructure	Local currency value/1000 Total of calculated scores
Financial Capital	Sought and received credit, Received remittances	Dummy variables if Yes =1
Social Capital	Horizontal linkages (numerical strength and confidence)	Dummy variables representing household's trust on people during any likely crisis
Natural Capital	Access to irrigation water source (canals) Ownership of land	Dummy variable if Yes = 1 Dummy variable if Yes = 1

**Table 6.6: Summary of Household Characteristics by Livelihood Strategy
Choice in Swat**

Variables	Mean	Min	Max	S.D.
Daily wages (LS 1)				
Household size	7.4	4	14	2.29
Total HH members (age 16 to 60)	4.6	2	8	2.08
Average age of employed members	34.1	0	52	10.60
Average education of employed members	3.2	0	12	4.08
Number of female 16 to 60 years	2	1	4	1.11
Access to public facilities	12.3	7	15	2.82
Household Asset value	20.5	2.3	89.1	16.23
Remittance received as additional income	0	0	1	0
Credit/loan sourcing options for any purpose	0.8	0	1	0.37
Association with family and friends	0.7	0	1	0.45
Finances/credit received in need	0.5	0	1	0.50
Land ownership	0.08	0	1	0.27
Canal water availability	0.3	0	1	0.47
Self-employment in businesses (LS 2)				
Household size	8.71	3	15	2.94
Total HH members (age 16 to 60)	5.45	2	12	2.74
Average age of employed members	35.95	21.5	58	7.45
Average education of employed members	8.69	0	17	4.14
Number of female 16 to 60 years	2.54	1	8	1.53
Access to public facilities	14.02	2	17	2.92
Household Asset Value	46.8	4.3	7	29.06
Remittance received as additional income	0.17	0	117.1	0.38
Credit/loan sourcing options for any purpose	0.72	0	1	0.44
Association with family and friends	0.71	0	1	0.45
Financers in need	0.71	0	1	0.45
Land ownership	0.30	0	1	0.46
Canal water availability	0.32	0	1	0.47
Agriculture production (LS 3)				
Household size	8.06	4	15	2.77
Total HH members (age 16 to 60)	5.01	2	13	2.32
Average age of employed members	39.04	0	60	10.03
Average education of employed members	7.97	0	17	4.72
Number of female 16 to 60 years	2.30	0	6	1.28
Access to public facilities	11.93	3	18	3.24
Household Asset Value	29.67	0	99.4	17.85
Remittance received as additional income	0.21	0	1	0.41
Credit/loan sourcing options for any purpose	0.75	0	1	0.43
Association with family and friends	0.56	0	1	0.49
Finances/credit received in need	0.71	0	1	0.45
Land ownership	0.96	0	1	0.17
Canal water availability	0.63	0	1	0.48

<i>Table 6.6 continued - Variables</i>	Mean	Min	Max	S.D.
Public sector employment (LS 4)				
Household size	8.11	3	16	2.83
Total HH members (age 16 to 60)	5.21	2	12	2.36
Average age of employed members	38.99	0	58	9.87
Average education of employed members	12.53	0	16	4.24
Number of female 16 to 60 years	2.42	1	7	1.57
Access to public facilities	14	7	18	2.41
Household Asset Value	49.49	16.3	105.3	23.81
Remittance received as additional income	0.35	0	1	0.48
Credit/loan sourcing options for any purpose	0.54	0	1	0.50
Association with family and friends	0.76	0	1	0.43
Finances/credit received in need	0.76	0	1	0.43
Land ownership	0.76	0	1	0.43
Canal water availability	0.47	0	1	0.50
Private sector jobs (LS 5)				
Household size	8.97	5	15	3.09
Total HH members (age 16 to 60)	6.22	2	14	3.19
Average age of employed members	34.12	0	60	10.04
Average education of employed members	8.47	0	16	4.56
Number of female 16 to 60 years	2.65	1	6	1.52
Access to public facilities	13.52	4	17	3.00
Household Asset Value	45.22	5.5	120.1	28.22
Remittance received as additional income	0.18	0	1	0.39
Credit/loan sourcing options for any purpose	0.59	0	1	0.49
Association with family and friends	0.68	0	1	0.47
Finances/credit received in need	0.81	0	1	0.39
Land ownership	0.61	0	1	0.49
Canal water availability	0.61	0	1	0.49

Refer to Table 6.5, in which the averages for variables with dummy values in all five strategies serve as a percentage. For example in LS 1 the mean 0.5 of variable ‘financers in need’ explains that 50 percent of households have confidence in three or more people outside the immediate family who can be requested to provide financial help during any household crisis.

6.7 Empirical Interpretation

The numerically largest household group in the above classifications engages in agricultural production and receives earnings from subsistence crop cultivation or orchard farming. This household cluster (3) is selected as the base category to analyse whether livelihood diversification into other earning and occupation categories, apart from agricultural self-employment, can be regarded as

systematically different from other livelihood choices. Table 6.7 reports the parameter estimates and the relative risk ratios for the multinomial logit model. Rahut and Scharf (2012, pp. 570) give a standard interpretation for relative risk ratios (RRR). “It implies that for a unit change in the predictor variable the relative risk ratio of a particular outcome, relative to the base outcome (which in this research is agricultural income based cluster 3), is expected to change by a factor of the respective parameter estimates given the other variables in the model are held constant. More specifically RRR can be interpreted as how many times or (RRR-1) percent a one-unit change in the corresponding variable will increase or decrease the likelihood of choosing an outcome relative to the base outcome (agriculture in this study). For example, If the age of the employed household members increases by one unit (year), the relative risk of diversification in comparatively low-income daily wage work relative to earning all income from agriculture farming is expected to decrease by a factor of 0.93 or 7 percent (parameter estimate), given the other variables in the model are held constant.

The estimation results in Table 6.7 explain that reliance on daily wages in Swat is negatively associated with the age of the working household members. Daily wage work is mostly available in construction or tourism-related businesses in Swat, and is usually more physically demanding, sometimes with longer working hours than formal employment, making it difficult for older people to be involved in this form of income generation. Moreover, in the construction and rebuilding activities that followed the war, most of the contracts were awarded to the military, and their regular employed work force provided the construction labour (Mehmood, 2011). That limited the job openings for civilian workers. If wage work was available, wages were not sufficient to meet even basic household expenditure, as was observed during the field study. Simultaneously the cost of food items and utilities increased in the post-war period, and these households remained unsuccessful in overcoming vulnerability. The tourism industry was estimated to employ 40,000 regular or irregular workers before the conflict: most remained out of work even after peace was restored (ADB & World Bank, 2009). Regarding land, its ownership increases the likelihood of preferring the strategy of agricultural production, relative to the alternative strategy of daily wage work.

The second livelihood classification in Swat, self-employment in businesses, consists of small-scale enterprises to medium-level business establishments. It includes a host of family-based businesses like shops, retail outlets and businesses providing some essential services. As expected, the surveyed businesses in Swat rely significantly on household size and labour endowment that minimizes labour and business running costs, by excluding as far possible any formal or informal wage workers hired from the labour force. The value of the RRR for household size is 1.285. It implies a positive association between increase in household size and the likelihood of continuing self-employment in business versus agricultural production, holding all other variables constant. One additional family member increases the probability of pursuing self-employment in business rather than adopting the alternative strategy of agricultural work.

Education does not explain the continuation of the livelihood option of self-employment in business. It is subject to the fact that in Swat, household members are, from a young age, engaged in family-based businesses as a substitute for hired labour and usually do not pursue formal education. More physical assets are positively associated and help households to pursue this more remunerative livelihood strategy.

Land ownership in Pakistan is considered a very safe investment and diversification option as land prices rarely decrease, and agricultural activity can also be pursued on a part time basis. However, that depends upon household savings and as Chapter Five observes, about 80 percent of the sample households in Swat did not report having savings. The result shows a negative association between land ownership and small business holding as a livelihood selection. Land ownership decreases the likelihood of pursuing self-employment in business relative to the alternative strategy of agricultural production.

Table 6.7: Multinomial Logit Model Results of Livelihood Strategies in Swat
Parameter Estimates and Relative Risk Ratio (RRR)

Variable	Coefficient	Std. Errors	RRR
<i>Daily wages versus Agricultural production</i>			
Human Capital			
Household size	0.028	0.232	1.029
Total HH members (aged 16 to 60)	0.254	0.337	1.289
Average age of employed members	-0.071	0.034	0.930**
Average education of employed members	-0.086	0.073	0.916
Number of females aged 16 to 60 years	-0.017	0.033	0.982
Physical Capital			
Access to Public Facilities	-0.094	0.132	0.910
Household Asset Value	-0.0018	0.024	0.988
Financial Capital			
Remittance	-15.104	0.000	2.76e-07
Credit/loan sourcing options for any purpose	-0.539	0.497	0.583
Social Capital			
Association with family and community	1.174	0.480	3.235
Financers in need	-0.460	0.002	0.630
Natural Capital			
Land ownership	-6.316	0.002	0.001***
Canal water availability	0.055	0.755	1.057
<i>Self-employment in business versus Agriculture production</i>			
Human Capital			
Household size	0.251	0.169	1.285**
Total HH members (aged 16 to 60)	-0.037	0.164	0.962
Average age of employed members	-0.039	0.022	0.961*
Average education of employed members	0.066	0.055	1.068
Number of Females aged 16 to 60 years	-0.005	0.023	0.994
Physical Capital			
Access to Public Facilities	0.018	0.088	1.018
Household Asset Value	0.028	0.120	1.028***
Financial Capital			
Remittance	0.078	0.589	1.082
Credit/loan sourcing options for any purpose	-0.679	0.251	0.497
Social Capital			
Association with family and community	0.525	0.855	1.690
Financers in need	0.525	0.540	0.996
Natural Capital			
Land ownership	-4.765	0.006	0.008***
Canal water availability	-0.346	0.325	0.707

Table 6.7 continued

<i>Capitals and Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>RRR</i>
<i>Public sector employment versus Agriculture production</i>			
Human Capital			
Household size	-0.009	0.143	0.990
Total HH members (aged 16 to 60)	0.105	0.206	1.111
Average age of employed members	-0.025	0.025	0.974
Average education of employed members	0.289	0.090	1.335***
Number of females (aged 16 to 60)	-0.132	0.024	0.986
Physical Capital			
Access to Public Facilities	0.037	0.096	1.038
Household Asset Value	0.023	0.012	1.023**
Financial Capital			
Remittance	0.959	1.328	2.610**
Credit/loan sourcing options for any purpose	-1.252	0.147	0.285***
Social Capital			
Association with family and community	0.959	1.430	2.611*
Financers in need	0.102	0.650	1.108
Natural Capital			
Land ownership	-2.712	0.551	0.066***
Canal water availability	-0.523	0.294	0.592
<i>Private jobs versus Agriculture production</i>			
Human Capital			
Household size	0.0196	0.130	1.019
Total HH members (aged 15 to 60)	0.335	0.230	1.398**
Average age of employed members	-0.055	0.204	0.945***
Average education of employed members	0.015	0.054	1.015
Number of females (aged 16 to 60) +	-0.032	0.225	0.968
Physical Capital			
Access to Public Facilities	0.045	0.092	1.046
Household Asset Value	0.022	0.012	1.023**
Financial Capital			
Remittance	0.064	0.580	1.066
Credit/loan sourcing options for any purpose	-1.470	0.115	0.229***
Social Capital			
Association with family and community	0.027	0.531	1.028
Financers in need	0.796	1.31.	2.217
Natural Capital			
Land ownership	-3.642	0.203	0.026***
Canal water availability	0.631	0.919	1.880
Prob > chi 2	0.000		
Pseudo R ²	0.3335		
Observations	275		

Statistically significant at 10% (*), at 5 % (**) and at 1 % (***).

Source: Author's field survey in Swat

Public sector employment (LS 4) is considered as a mostly secure livelihood selection in Pakistan, particularly among the lower and middle-income groups. Economic fluctuations do not affect salaries and public sector employment is also associated with pensions and other work related benefits. The households in Swat show similar attitudes. In response to a survey question about what was considered the best livelihood option, 39.3 percent of households choose public sector employment. Education is crucial for better employment, and the estimation results validate this known empirical finding. An increase in average education of employed household members significantly increases the likelihood of pursuing public sector employment relative to post-conflict low return agriculture-based strategies. Household asset value has a positive association with this relatively stable livelihood option in terms of income. The parameter regarding remittance has a positive association with public sector jobs. It explains that receiving remittances substantially increases the probability of pursuing public sector jobs relative to agriculture-based livelihoods, given that all other variables are held constant.

Remittances remain a preferred and stable income source in post-conflict Swat. During the field survey it was noticed that households whose members work in other countries, mostly employed in the Middle East (a common destination of workers from the Northern Province), consider it a good diversification option. A striking result reveals that access to credit and sourcing options increases the probability of adopting the agricultural production strategy. Public sector jobs, though giving employment security, are not rewarding in salary terms in Pakistan. The cost of living is consistently rising: inflation has remained above 10 percent for many years, while salaries in public sectors have not increased accordingly. Particularly in the post-war environment, the cost of living has further increased, associated with rehabilitation and reconstruction expenditure. Land ownership was found to decrease the likelihood of adopting public sector jobs relative to agricultural production. The ability to diversify into the pre-conflict rewarding option of agriculture appears to be a function of households' relatively greater financial liquidity by access to credit and remittances. This finding is consistent with previous studies on the importance of financial capital to livelihood diversification (Barrett et al. 2005; Brown et al. 2006; Dercon & Krishnan, 1996).

Agricultural production as a complementary choice alongside public jobs is very practical in the context of Swat. Agricultural work can be done part time, and there is also the possibility for surplus household members to engage themselves in farming work. Finally, for this livelihood cluster, the parameter for social capital positively associates with the possibility of pursuing this strategy choice. More social relations and horizontal interactions increase the likelihood of continuation of public sector employment.

Employment in the private sector includes jobs in Swat as well as those in other cities and countries. These are the most rewarding livelihood selections in the post-war economy of Swat district. Human capital is most significantly associated with this choice. More household members in the working age group increase the probability of pursuing this livelihood. Larger households presumably benefit from returns to scale in different household tasks. A number of studies emphasise that if all markets are perfect, household size should not have an impact on labour supply (Rahut & Scharf, 2012). The finding that household size has a significant impact on diversification behaviour suggests that labour markets in Swat are imperfect. This livelihood selection is negatively associated with the average age of a household's working members. Increase in age decreases the probability of adult members working in private jobs or away from Swat. Younger household members seem to prefer this livelihood option. The physical asset value is significant; those with more physical assets are more likely to pursue livelihoods in this comparatively rewarding non-farm sector. More access to and availability of credit significantly decreases the likelihood of pursuing private jobs compared to agricultural farm work, similar to the results with public sector employment. There is no inconsistency in results regarding land ownership and livelihood portfolios; all show a statistically negative association. Land ownership drives the likelihood of choosing agricultural production as a household livelihood choice, suggesting that households without land are constrained from adopting this strategy.

Summing up the empirical findings, the gender effect represented by the number of adult females of working age in a household does not associate with any livelihood choice. It validates the survey results regarding the role of female

working-age household members. A significant majority of working-age women are involved in household work and do not participate in outside economic activities. Social capital positively associates with public sector jobs, and as expected the likelihood of adopting public sector employment increases with the strength of social relations with relatives, friends and community. Social relations were found to be good sources of information and indicated confidence in survey results for the post-war year in Swat. Physical capital's value effects are significant in driving all livelihood choices except for daily wage work. This is understandable since daily wage work is the least remunerative of the selected livelihood portfolios and this creates constraints on physical asset accumulation. Moreover, it involves manual labour and physical asset value may not influence this choice. Public sector jobs and private sector employment have higher rewards compared to other choices, and with more financial capital the likelihood of diversification increases. As noted above, this looks plausible given that agriculture is considered a rewarding diversification option in Swat. Finally, in terms of empirical interpretations as mentioned in the introduction, this study is a first attempt to explore the effects of assets on livelihood strategy choices in Swat, therefore comparisons of results with other available livelihood studies on Swat are difficult to achieve. The results, wherever possible, are compared with field survey findings, and are explained based on information and insights gained during field discussions in Swat.

6.8 Conclusions

Households in Swat not only experienced violent occupation by the Taliban, followed by a full scale military operation against the Taliban, resulting in displacement for months, but upon returning also faced a natural shock in the form of severe floods, just as these displaced households were struggling for resettlement. Vulnerability rarely occurs on this scale. This chapter focuses on these households, and contributes to understanding their post-war livelihood portfolios.

The losses in Swat were enormous. A once-thriving agricultural and tourism-based economy turned into chaos and ruins, and became dependent on humanitarian assistance and aid. Conflicts, as Ibanez and Moya (2009) argue,

leave a legacy of structural poverty that is difficult to overcome. Households at the lower end of the income distribution find it tremendously difficult to cope with the conditions created in the post-conflict environment. Justino (2009) believes that in such times households may find it difficult to continue even their known survival strategies. That is the case for agriculture in Swat, as this study observes. In the pre-conflict period, it was the centre of a fruit orchard industry, coupled with related facilities for grading, storage and processing to enable transport of the products to other parts of the country. Zahid (2009) estimates that losses in fruit production as a result of war ranged from 30 to 60 percent. Fruit orchards by their nature take not less than five years to recover from damage provided proactive agricultural practices are followed. These require substantial capital investment, which post-war shattered households do not possess. The survey data revealed that this was also the lowest income earning sector among the five classified household groups. It was not like this in the pre-war period. Households in Swat usually own small farms but were previously able to earn reasonable amounts. For example with one hectare (2.47 acres) of mature apple orchards, a household was able to earn an approximate yearly income of Rs 0.5 million (approximately US \$5700)⁸⁵ in the pre-war period. This is quite a reasonable living in Swat. This study selected agricultural households as the base comparison group, because it was the largest in the sample. The ADB and World Bank (2009) also identify that more than 70 percent of the population of Swat is dependent upon agriculture, directly or indirectly, as their primary livelihood source.

This chapter contributes to the micro conflict literature that focuses on war zones. It studies the post-conflict economy of Swat, and its impact on how various capitals (human, financial, physical, social and natural) affect the adoption of livelihood strategies in the regional post-conflict environment. It is the first attempt to fill the gap in the literature that exists regarding the recent violent conflict involving the Taliban and state forces. This study introduced the approach of identifying livelihood strategies from household survey data in Swat, using cluster analysis. The resulting partitioning of the data shows that some livelihood strategies offer demonstrably higher income returns, yet are unattainable for some

⁸⁵ 1 U.S \$ was approximately equivalent to PKR 88 at the data collection time

households, given their post-war asset endowment. The findings of this research reveal that small businesses are just above the daily wage informal group (LS 1), in terms of income earning. This again is a changed economic situation. The post-war survey was conducted within a devastated economic and business environment. In the pre-conflict period Mingora (the biggest city in the district) was the largest market in the country for Chinese-made goods. Thousands of people were associated with this business, which was among the major economic casualties of the Taliban's occupation. Thousands visited these markets on business trips. It was not only that hundreds of shops were destroyed during the civil war, but related sectors like transport, hotels and restaurants collapsed almost completely. Not only did the inflow of tourists visiting for the pleasant weather and sightseeing end, but business visitors also stopped travelling to Swat.

A practical limitation in the micro post-conflict studies (section 6.2 reviews some such studies), is reliance on cross-sectional field data. Among the studies reviewed, Justino and Verwimp (2008) use panel data for their study on Rwanda. But even they rely on secondary data for pre-conflict information about the same households which they surveyed in the post-conflict environment. Conflicts are uncertain in terms of their intensity, timing (when they will begin or intensify), locational aspects (which areas are most affected), and with respect to displacement and rehabilitation of affected households (who may change their location if they return, or may not return at all). Such characteristics make it impractical to rely on any other form of primary data-based analysis. The exact quantitative nature of pre- and post-conflict asset and income losses is thus quite difficult to estimate. Nevertheless, this study asked people questions (in qualitative terms), about pre- and post-conflict losses and about livelihood coping strategies (see Chapter Five). For earnings (e.g. agriculture), and pre-conflict prices it also relied on secondary information sources.

This chapter suggests various asset-based constraints as the main factors influencing livelihood diversification. Certain activities have high entry constraints in the form of skills (education), and financial capital. Physical capital remains significant in driving livelihood strategies LS 2 to LS 5, but not LS 1, which is work based on daily wages. The two high-return livelihood choices,

private jobs (LS 5) and public sector employment (LS 4), are more likely to diversify into farm-based income earning if they have access to credit, and remittances increasing their financial liquidity. However, few formal credit disbursement mechanisms exist in rural Swat. Some NGOs grant limited amounts and a micro-credit bank operates in the area, but the interest rates and collateral requirements put these out of reach of most people. Low physical asset values make diversification less likely: an increase in physical assets enables households to pursue the known livelihood strategies. A consistent and strong finding of this study is that ownership of land (increase in natural capital), increases the ability of households to diversify into farm-based livelihoods, which were a rewarding option in pre-conflict periods.

In terms of policy options, this chapter suggests that the biggest and once-rewarding livelihood option of agriculture requires assistance for its revival. Similarly, the natural and time-tested advantage of the area as a tourist destination associated with small businesses must be a focus of development priorities, including broad based infrastructural development. This requires peace and no further Taliban intervention.

This livelihood choice analysis and its connection with asset holdings will lead to the next research question. This final question identifies post-war developmental interventions that may result in labour allocations to profit-orientated sectors. These interventions may enable revival of the pre-conflict thriving sectors in Swat: agriculture and tourism businesses, which this study establishes as the worst affected. The next chapter addresses these issues and the potential impact of the revival of the regional economy. Such revival may decrease the likelihood of household members joining militant groups solely for economic gain.

Chapter Seven

The Inter-Sectoral Model for Household Assets and Opportunities in Post-War Swat

7.1 Introduction

Civil war in Swat changed household assets and livelihoods. Injuries, recruitment, imprisonment, and loss of life in a household altered household compositions. In the post-conflict economy, many households' earnings decreased and expenditures increased, as confirmed when analysing the survey data. The economic status of affected households drastically changed with destruction or theft of assets, and the forced displacement resulting from civil war. The survey data revealed that about 80 percent of households did not have savings, and had to sell their assets, take credit or decrease spending as survival strategies. Agricultural and business activities were affected thus decreasing employment and wages in the shattered post-conflict economy, as explained in the previous chapter.

With this background, this chapter focuses on changes in labour movements in the post-conflict economy of Swat, and thus investigates the final key research question of this thesis: how do households' livelihood assets interact to determine livelihood opportunities, which may emerge from the positive shocks (as discussed in later sections) applied to the regional post-war economy of Swat. This exploration is based on assets, which were found to significantly affect livelihood choices during the econometric analysis reported earlier in Chapter Six. These include human, financial, natural and physical capitals. Livelihood revival depends upon the accumulation of assets, and these create livelihood opportunities, such as employment. More employment opportunities may increase wages and thus income. This chapter investigates these significant effects of asset increase on the creation of opportunities, which have the potential to enhance livelihoods in Swat.

Another goal in this chapter is to discover which development policy interventions may create alternative livelihood opportunities, whereby employment and wages can increase in an integrated manner in the major sectors

of Swat. This encompassing analysis will help to answer the question of whether improved livelihood options including employment and wages can decrease the chances of recruitment into militant organisations such as the Taliban. Post-war resettlement efforts and policies undertaken by the Government and international donors so far, which are mostly similar, consist of across-the-board interventions in conflict-affected areas, including Swat. These interventions include welfare assistance, housing reconstruction grants, subsidised inputs for agriculture (one-off or more broadly distributed), and reconstruction of some infrastructure. An integrated framework to enhance sustainable livelihood is lacking. If a government framework exists in this field (more details in section 7.3), it is not area-specific, and does not address the needs-based requirements of different areas suffering from different types of damage. Further, these interventions lack any estimation of their quantitative impacts. Such interventions as have been carried out have been found to have negligible time-based impact on livelihood revival, which are discussed in more detail in later sections. Consequently, as reported widely by the media, this raises questions about whether the slow economic recovery may undo the hard earned military gains and result yet again in recruitment to the militants.⁸⁶ The challenging question of this chapter, against this background, is that in such random efforts, the concept of security is taken as protection from insurgents and relief is considered in terms of training, welfare donations and subsistence aid, rather than in terms of enhancement for sustainable livelihoods. This study considers the sustainable livelihood approach as a possible way to reduce the chances of recruitment to the Taliban militia in Swat.

The analysis in this chapter is based on several interconnected findings from earlier chapters, which analysed post-conflict household characteristics and the adoption of livelihood strategies with certain asset endowments. That foundation provides some understanding of post-war labour allocations, and the most relevant interventions for livelihood enhancement, within a dynamic simulation modelling framework.

The literature which discusses successful post-war livelihood revival phases includes a study by Ibanez and Moya (2009) in Colombia. They observe that

⁸⁶ See more details in section 7.3

better educated households, access to savings and credit, support from government agencies and, in general, increase in the asset base are the factors which contribute to early household recovery. Dourian et al. (2010) observe in post-war rural Kosovo that with better infrastructure (such as good road networks that link efficiently with other areas), and creation of economic opportunities, livelihoods can be rebuilt. They further stress the need to heavily support the pre-war competitive sectors. In the same context, Justino (2009; 2006) argues that post-conflict policies require focussing on structural development programmes. In her study in India, she finds that in the medium-term (i.e. over a period of five years), increased public expenditure on social services, alongside improvements in education, is an effective means to prevent the outbreak of violence.

The analysis in the previous chapter explains that assets have different impacts on different households, depending on their adopted livelihood strategies. The previous analysis also reveals that the dynamism of Swat's pre-conflict economy relied on its largest and second largest sectors, agriculture and tourism businesses. However, these sectors fell into the lower income bracket after the combined shocks of the civil war and displacement. The following sections focus on these two sectors for reviving Swat's economy and improving household livelihoods. The next section looks at some damaging impacts of civil war on these two sectors.

7.2 Devastation of Agriculture and Tourism

More than 70 percent of the population in Swat district relies on agriculture (directly or indirectly) as their primary livelihood option (ADB & World Bank, 2009, Zahid, 2009). The climatic and geographical conditions of the district make it very suitable for fruit farming, including apples, peaches, plums, apricots, and persimmon. Walnut trees are another high-income earning source in Swat. The survey information revealed that the per acre income output from these farms was higher than from other agricultural crops in different parts of the country. Produce sales provide instant cash, and many wage work opportunities for related agricultural activities. Thousands earned their livelihood by spraying and pruning trees, and packing and transporting fruit. The militancy and civil war affected farms and orchards most, and the resulting displacement left them unattended and

unprotected. Although some farmers were able to pack and send products to markets, as Zahid (2009) observes, damaged roads, bridges, risky movements and curfews resulted in higher rates of transportation charges that further reduced net profits. Fruits with short perishable life cycles rotted and were wasted, while being loaded on trucks and transported to the main fruit markets. This incurred losses of millions (PKR) to the growers.

ADB and the World Bank (2009) estimate that in war-affected districts of Pakistan, including Swat, the losses were about 70 percent as direct damage to agricultural assets and stocks, and about 30 percent were due to indirect damage to agricultural production. Most of the immediate losses were recorded in the livestock sub-sector, including sheep, goat, and cattle farming and domestic poultry. Livestock either perished or was lost. Households abandoned their animals when they had to move, and many of those animals subsequently died or were slaughtered by the militants in the area. During field visits for this study the locals stated that if they wanted to sell their animals, traders made “distress sales” and bought them at around 10 to 20 percent of their market price. The survey data in Swat conforms with this observation, as few households reported livestock holdings in the post-conflict period. In comparison, in the provincial mountainous regional setting of Khyber Pakhtunkhwa, livestock farming remained a reasonable livelihood option alongside crop production and fruit farming.

The direct damages to the crop sector were in the form of un-harvested standing crops and fruits. When the military operation began, wheat crops and fruits (mainly apricots and plums) were about to be harvested. Shelling, aerial bombings, militants and military movements severely damaged crops and fruits and irrigation sources like canals, tube wells, dug wells and flood embankments. In addition, it was estimated that about 80 percent of Kharif (summer) crops in 2009 could not be cultivated as displaced families did not return to their villages and farms (Zahid, 2009). Losses of crops, particularly orchard crops, are difficult to quantify in the short term. Orchards if allowed to degenerate take years to recover. The farming patterns of orchards are unique and have special maintenance requirements. Usually other crops are not sown in areas allocated for orchards, although sometimes vegetables are grown in the same lands for

additional income in Swat. Wheat is also sown, but rice is out of the question, as it requires standing water, which is harmful to orchards. Both, the militants and the military, damaged crops and trees in pursuing their objectives. If new trees are planted, most take about 10 years to mature and reach reasonable production levels.

Tourism was a dynamic and major sector over the past three to four decades as a source of employment and income generation in Swat. This was complemented by the high growth of hotels and associated businesses, which played a major part in the valley's economy. The tourism-related employment network included the transport sub-sector, taxi drivers, tour guides, plumbers, electricians, and related shops providing mobile phone services, internet cafes, local handicrafts, electronics and routine daily items. Ali, Shah, Jan and Man (2012) in a survey-based study, estimated that there were 400 hotels providing accommodation and food services to tourists, thus generating income for the locals. Among them there were about 90 comparatively high-priced hotels in the area, and about 45,000 workers were associated with hotels and restaurants. The growth in trading, mentioned in the concluding section of Chapter Six, further boosted tourism. It is estimated that 24 hotels were either completely destroyed or severely damaged during the civil war or in the severe flooding, a year after. Aside from complete destruction, the overall hotel and food industry and related workforce suffered in multiple ways. During field discussions, it was noted that the decline in number of tourists decreased wages, while expenditures by hotels on security increased after the war and the number of permanent and casual locally hired workers decreased significantly. Ali et al. (2012) calculate that on average salaries in the hotel industry decreased by 50 percent, expenses on hotel security increased many times, and the number of permanent staff was reduced by up to 25 percent. Casual staff was the worst affected: on average their number decreased by 50 percent in the hotels, according to the survey by Ali et al. (2012).

Losses to small businesses were higher in Swat than in other war-affected districts, because the Taliban specifically targeted and destroyed shops in the region. ADB and the World Bank (2009) estimated that more than 2600 shops were either fully destroyed or damaged. As observed during the field visits and

discussions in the post-conflict period, with fewer buyers the sellers have to decrease their prices, particularly of locally produced handicrafts. These include embroidered clothes, famous Swati woollen shawls and decorative items made from marble and other locally produced stones. The female work force, working from home, was also involved in the manufacture of traditional Swati embroidery, knitting, and dress-making. This had an overall adverse income impact on households involved in the production and sale of these products.

7.3 Post-Conflict Livelihood Revival

Low income from agriculture and tourism, unemployment, increased health and education expenditure, and losses of physical, natural and financial capital, are among the major identified constraints for the reestablishment of livelihoods in Swat. To date, financial resources and manpower have been provided for assistance and rebuilding of infrastructure by the government, with support from countries including the US, China and the UAE. Such assistance has included direct support of agricultural inputs for farmers, in the hope of restoring production. However, most donors and aid organisations were concerned with the return of the displaced population, instead of mapping longer and more effective revival programmes. The government's view remains that aid did not come as was promised in commitments of more than US \$263 million (PaRRSA, 2011). But with what it got, it did not practically formulate an integrated strategy for the revival of the post-conflict economy. One available document about the strategy for stabilisation and socio-economic development of Malakand division (Swat is one of its districts) provides a framework for different post-conflict interventions (Government of NWFP, 2009). However, this framework and the proposed interventions are not district-specific, and contain uniform and across-the-board proposals. It can also be argued that these proposals are not need-specific, according to the requirements of various districts. Further, this strategy lacks any quantitative estimates of the impacts the proposed interventions are likely to create. Regarding district-wise spending, the only detailed document available concerning rehabilitation is a report by the Provincial Relief and Rehabilitation Settlement Authority (PaRRSA),⁸⁷ published in 2011. It provides details about spending in Swat. The highest amount was allocated for providing housing

⁸⁷ This organisation was established at the provincial level to integrate the relief efforts in 2009

reconstruction subsidies of US \$11.7 million, for partially or completely damaged houses. In its needs assessment, this document prioritises road network development and agriculture, including livestock and irrigation as having the most funding requirements in the post-conflict revival. In contrast, the donors committed to provide the highest amount (US \$65 million) for housing needs. This could be due to the background of displacement, when people were compelled to live in refugee camps, but it also shows the differing priorities in foreign aid distribution and in locally felt requirements. Even local requirements sometimes do not address the realities, as will be discussed later.

Donor organizations like USAID and UNDP selected tourism as a priority sector for the rehabilitation of Swat's economy. Working with the collaboration of PaRRSA in Khyber Pakhtunkhwa province, the programme provided working capital and cash grants to selected hotel owners,⁸⁸ alongside technical training. USAID targeted assistance to agriculture also, with a US \$ 0.6 million programme for peach orchard farmers. The focus was on technical training of the farmers to equip them with improved farming techniques. For revival of tourism, UNDP sponsored festivals and events like *Aman* (peace), and a ski gala in collaboration with the Pakistan army. Tourists from different cities attended these events, as there was a strict commitment for peace from the army.

These targeted and selected efforts helped people, whether these were made through public organizations or by international donors. However, no documentation could be found that provides time-based evaluations of the various rehabilitation efforts. The government's development strategy mentions a five-year period for the completion of different interventions. However, as Ellick (2010) reported, more than a year after the displaced returned to their homes, the various development initiatives remained far from being realized. Similarly, Conway (2011) reported that at that time no across-the-board resettlement integrated policy perspective had been developed even two years after the end of the civil war. However, on a positive note, the floods in 2010 may have diverted

⁸⁸ The details of these programmes are not available on USAID's website. More details are on national level programmes and on their budgets. Pakistan Stabilization Working Paper (2011) briefly describes activities in Swat, while the current more budget oriented programmes are for FATA, the current active conflict zone. The sources are various media reports and <http://tourswat.com/usaid-assistance>

attention from reconstruction efforts and altered spending priorities. The government and donors still have a chance to reconstruct the post-war economy and livelihoods, and obtain comprehensive gains after a large-scale civil war.

Distribution of aid and relief procedures raised questions too. The relief to targeted persons or households was mostly via a selection procedure. The field staff of aid agencies and PaRRSA selected the beneficiaries. However, selections can be biased, ignoring those who may meet one criterion but not another. Complaints were often reported in the media and were observed in the field survey too. People on one side reported quite a reasonable income but simultaneously received grants from NGOs. Nyborg et al. (2012) in their research study on post-war Swat mention that targeting of aid was problematic; food and livelihood support suffered from poor assessments and biased distribution. There was considerable elite capture of funded resources. By comparison, infrastructural investments are more visible and beneficial to the larger population.

For revival of livelihoods in Swat, given an initial expansion in tourism businesses, a simple simulation model of economic interactions between agriculture and tourism is developed in the following sections. The labour force makes decisions to shift between sectors based on relative profits or net wages. Net returns from tourism-related activities depend on labour availability and costs. This also depends on farm production and profits: if these decline, the surplus labour shifts to the expanding tourism sector. The simulation model will note that switching between sectors may be complicated (Lim & Saw, 2006). The model is an illustration of the underlying processes of revival of the affected economy, inter-sectoral labour supply, and about reducing chances of recruitment to the militia. Most of the parameters of the simulation model are derived from the household survey data, from its analysis and the significance of a range of covariates during the subsequent econometric analysis.

7.4 The Modelling Framework

This section turns to a model of inter-sectoral interactions that highlights the salient issues associated with infrastructural development. These include main roads, bridges, tourism-related facilities including tourist resorts, facilitation of interconnected multiple businesses, education, and public health infrastructure. As

mentioned earlier, two previously dynamic economic sectors, agriculture and tourism, are considered. The tourism sector as described in section 7.2 consists of hotels, restaurants, retail shops, transport and multiple interconnected small tourism businesses. Agriculture has various crop-yielding practices ranging from subsistence crops to orchard farming. This sector includes a range of village-based economic production activities that relate to food inputs or outputs, including farming, forestry, livestock herding and the process of transportation of products from farms to markets. Orchards are financially rewarding and the climate of the district suits fruit tree growth and production. To simplify the model, the aggregated variable agriculture is considered to consist of orchard farming. The revival of orchards is crucial: these were the main cash crop and are exclusive to the district's agricultural economy.

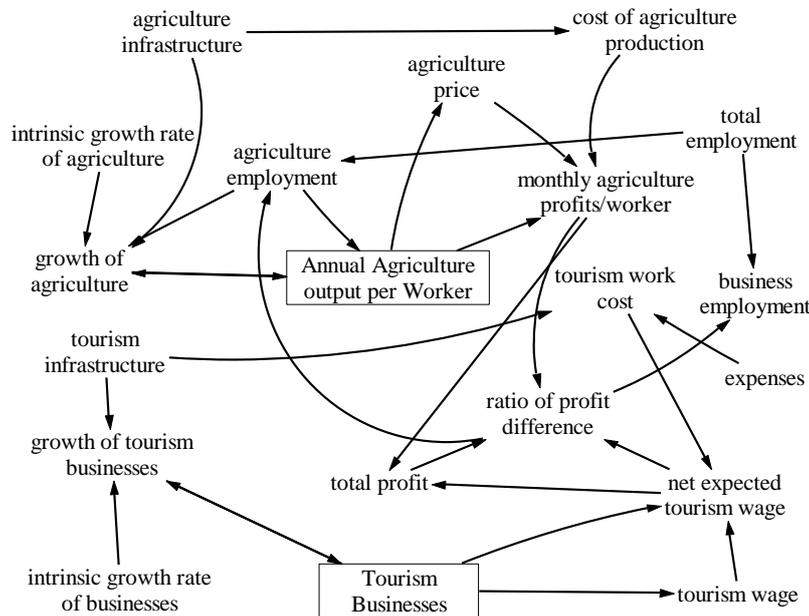
Farmers lack financial capital and credit is mostly unavailable for investing in required inputs. The low input and output and damaged infrastructure have created surplus or underpaid labour in the agricultural sector. This was the finding in Chapter Five, sub-section 5.2 and in Table 5.3, which explains individuals' reasons for not being part of the job market. The labour surplus pool is largely people with low skills and education: the other sector, tourism businesses, simultaneously affected, cannot create new employment opportunities for the surplus pool. The unemployed and underpaid workers in the agriculture sector have a high probability of joining militant groups, as most of the initial recruitment by the militants drew on such segments of the rural population (Khan, 2009). The chances of joining the militants reduce if jobs emerge and profits increase, or they leave the agriculture sector for better wage-earning opportunities.

The model presents a 'hypothetical economy' with an assumed size of labour force, and addresses three broad issues. The first looks at the change in labour allocation between the two sectors in a safe environment (peace is maintained). It observes the impact of agricultural production on the income of workers in the agricultural sector, and the possible reduction in the chances of recruitment to the militants, as result of improvement in sustainable livelihoods. The basic model is summarized in Figure 7.1, which assumes that militants are not able to destabilize peace (either through talks or force). Major routes are safe and in working

condition, leading to increased and rapid access of available food production to market, thus increasing the income per worker. (This would include the roads from Mingora to Khwazakhela and Matta in upper Swat, which are major centres for orchard farming.) As more agricultural products quantity is available, prices may go down or increase, as with improved infrastructure produce can be sent to non-local markets provided prices are better there. Simultaneously, costs decrease, particularly for transportation, both locally and further afield. Better infrastructure decreases transit time, which is crucial for fruits with short storage life, and there is also a more competitive transportation network. The profits per worker in the sector would depend on the cost of inputs, production, and market prices.

If crop prices increase, the capital gains may be invested in buying more tools or equipment, which help in increasing crop productivity and further profits for workers. Alternatively, if prices decrease and affect wages, workers would decide about shifting to a higher income earning sector, such as tourism businesses. Tourism growth also has prerequisites: the basic infrastructure like main roads must be repaired or rebuilt, and hotels and related facilities must function well in a competitive environment. The decision of workers to relocate is based on the comparison between net wages earned in tourism and in agriculture with given skills. This alternative is even being considered with a certain increase in profits from the agricultural sector. Workers will look at the net expected tourism wage, as there are still constraints on finding work and on the nature of the available work. The expected tourism wage would affect decisions about sectoral movement (Lim & Saw, 2006). Expected wage refers to the net tourism wage times the probability of getting a job and the probability directly relates to the growth of tourism businesses. However, as found in Chapter Five, about 72 percent of household members have basic literacy skills and this may positively affect the probability of getting jobs. Figure 7.1 next, represents the dynamic hypothesis, and extracts the essential elements and connections in the Swat's economy (the system boundary), observed (through survey) and anticipated behaviours (through observations).

**Figure 7.1: Inter-Sectoral Labour Allocations in Swat:
Dynamic Behaviour**



Sustainable orchard farming has positive impacts on production. With more production the relative price advantage may not be maintained. However, costs are expected to decrease in a competitive market that has better infrastructure. Also significant is the time lag in revival of production, which could be more than expected. Financial capital is not readily available to invest more in agriculture inputs. Without knowledge of the relative sizes of these potential impacts, the direction of labour movement is difficult to determine. If the conceptual structure is close to reality, it can be expected that as surplus labour arises in agricultural production, its re-location, or engagement in newly created jobs will result in additional income support to the household. If some of it were invested in more farm inputs this would mean that profits per household are likely to be maintained, offsetting any potential loss from family labour diversification. If prices of agricultural products increase, profits may be enhanced by increased production resulting from more inputs and better management practices.

7.5 Simulation Modelling and Livelihood Analysis

This section illustrates the time paths of the variables under alternative scenarios. The software Vensim PLE 32 version 5.1 was used. It is a simulation modelling tool for dynamic systems. The relationships between different variables in the system (post-conflict) are entered as causal links to build stock and flow diagrams, which show relationships in the parameters which have the potential to change over time: these in combination represent the system to be simulated (Kirkwood, 1998). The structural validity of the model comes from the knowledge of the system structure (survey data in this study) (Sterman, 2000). Various studies use these models for different research objectives, including management and planning issues, and particularly for livelihood analysis. Kristjanson et al. (2005) study livelihood strategies in the semi-arid areas of Kenya; Gladwin et al. (2001) investigate the multiple livelihood strategies of African women farmers and their implication on food security. Grasso (1998) exclusively focuses on labour allocations in forestry and fishery production as a trade-off in mangrove ecosystems. Similarly, Lim and Saw (2006) study landmine casualties and the resulting labour interactions in the manufacturing and agriculture sectors in rural Cambodia. In another study Rohorua and Lim (2006), observe sustainable livelihoods in the small island economy of Tonga, and the inter-sectoral labour movements between the fisheries and tourism sectors if mangrove sustainability affects more than a certain limit.

7.5.1 Modelling Parameters

The simulations use data from the household survey in Swat to set the initial simulation parameters such as agricultural production, profits per worker, and the cost of production. The data for prices from the survey information are cross checked with market prices. However, the market prices are higher than the prices which growers receive. These include additional costs of packing, transport and profits of the traders. In agriculture, multiple harvesting patterns exist for wheat, rice, maize and vegetables, but more financial remuneration is obtained from orchards of apples, peaches, plums and amlook (date-plum, a member of the persimmon family). Growth in agriculture in the model is taken as subsequent growth in orchard farming and production. Landholding in the area is measured in jareeb (used in the survey for size of landholding), which is equivalent to 531 sq.

meters, and about 10 Jareeb are equal to 1 acre of land (5318.8 sq. meters). Most landholdings in Swat are not large. The survey respondents with agricultural lands had an average of 1 acre per household.

Average agriculture income (US \$943) was estimated from the survey data, and is used in the model.⁸⁹ Among the tree crops, apples, peaches and walnuts have comparatively high market prices, and yields also vary for different fruits. For example, pears usually have a higher per/acre yield, while walnuts result in more profits. With a constraint to have uniformity in the model the fruit price based on survey data is calculated with an average production of 2.1 metric tonnes per acre, thus income per acre is divided by production per acre ($943/2.1$), giving an average income of \$450/tonne per acre.

An exact estimate for the number of tourists visiting Swat is hard to make, however, locals and hotel owners stated during the survey that in peak times there used to be 100 percent occupancy in the hotels. Tourist spots and hotels are spread all over the Swat district including properly built resorts, and restaurants spread alongside the river Swat offering freshly-caught fish-based dishes. Related tourism businesses including restaurants, transport, retail shops (particularly for local handicrafts), and various other shops used to have more customers during the peak tourist inflow, resulting in reasonable earnings. Workers in tourism businesses include those who travel from adjoining areas and return home after work. However many live at their work sites, thus helping the employers (work hours increase for them) and saving costs for the workers too. Rents are not paid for temporary lodging at the site, food is usually free for the employees (it is a local work tradition: employers share food with the employees) and clothing costs very little. As labour is reallocated from agriculture to other sectors, farm output does not fall; labourers were already surplus or were underpaid as discussed earlier. The relocation from agriculture to the tourism sector (given disguised employment on farms) thus has a very low or zero opportunity cost of foregone food output.

⁸⁹ That included income from subsistence crops also, which is less than orchard farms income.

The wages of unskilled workers in businesses ranged at the time of survey from \$35 to \$45 per month.⁹⁰ The model assumes average earnings of \$40 per month in tourism businesses, which includes expenses, such as transport or other living costs. The choice of working in a particular sector is dependent upon the choice of lifestyle too. The lifestyle associated with working in the tourism sector may be more desirable than living in the village. However, Lim and Saw (2006) observe that in determining inter-sectoral labour allocation the preferred criterion for workers is the net financial remuneration. The data validates that the skill and educational level of workers in low paid jobs in the two sectors are almost similar. Movement from agriculture to tourism tends towards low-skilled, labour intensive work.

7.5.2 Model Assumptions

This section discusses the outline and key assumptions,⁹¹ which form the foundation of the simulation equations. Where possible, the theoretical assumptions and resulting equations present an approximate reality of the economic and demographic regional environment as derived from the survey data, and presented in the outline described earlier. For simplification purposes, the total labour force in the model is fixed at 10,000 workers. This is to represent an economic unit at community level. From the average household size of eight as calculated from the survey data, three are assumed to be working age male members employed in orchard farming or tourism businesses, and constitute the initial employment numbers in both sectors. Others are either old or very young, studying, or female members (who usually do not work outside the home in Swat). The land ownership of each household is assumed as one acre. The agricultural price is initially valued at \$450/tonne from a production of 2.1 tonnes per acre, consistent with my field survey of prices. Each worker's production is 0.7 tones/worker/year (giving a low annualised output in the post-conflict period). The average cost of agricultural production is at least 40 percent (\$180/tonne), as estimated from the survey data.

⁹⁰ For consistency with other calculations in the thesis, conversion rate is taken with an approximate value at the survey time. However, the current US \$ rate is higher, and so are the wages in PKR.

⁹¹ Assumptions are flexible in the model

Simulations start with the assumption that 625 businesses are initially operating and employing workers. At the start of simulations around 33 percent or 3300 workers are employed in the tourism businesses. Agriculture is employing about 6700 workers initially. This percentage share (67 percent) is very close to estimates of employment in the agricultural sector in Swat as noted earlier in the chapter. The survey data further revealed that around 60 percent of households reported landholdings and 24 percent were employed in businesses. While considering the two employment sectors, the model thus assumes that employment in agriculture or tourism are the only available choices for workers.

The growth rate of food production is dependent on multiple exogenous and endogenous factors. Improved infrastructure is one of the exogenous factors, as is the intrinsic growth rate of agricultural output. The intrinsic growth rate of agriculture⁹² will result from more inputs, and resultant possible increases in natural capital i.e. land quality and production (per worker). The outcome is increased profit, and these factors link financial and physical capital with the overall growth in agriculture. In the simulations the positive shocks will also involve the role of increased human capital e.g. short-term educational attainment including better management practices and the role of improved inputs. Infrastructural improvements involve improved irrigation systems and facilities such as better transportation and parking spaces, and all-weather sheds for temporary storage of products at the local markets. Similarly, tourism businesses are dependent upon infrastructure development that consists of more than just communication networks. Management training for small businesses and possible mechanisms for provision of financial capital are part of the infrastructure development. Available financial capital will influence the growth rate of tourism businesses. These links will explicitly explain the role of increases in assets (physical, financial and human), in the growth of agriculture and tourism businesses, and resulting improvements in livelihoods.

⁹² Only labour and infrastructure (more capital) are the determinants of agricultural output. Without them, the growth in marketed agricultural products will be close to zero (i.e., the intrinsic growth rate is low).

Following Lim and Saw (2006) and Conrad (1992), the model assumes that food output per worker grows logistically.⁹³ Improvement in agricultural infrastructure in the model assumes that better farm management practices, including timely input practices and improved road and transport networks will increase food output per worker. Tourism businesses also grow logistically; new businesses will enter alongside the revival of the existing ones. Model assumptions for tourism infrastructure involve improved road and transport networks, better entrepreneurship, access to financial capital and better provision of public utilities and services. However, both sectors will have a maximum limit of expansion. The potential annual agriculture output per worker is set at 1.5 tonnes/year, slightly more than double the initial output, given the revival of farms with uninterrupted production and benefits associated with infrastructure services. The assumed potential volume of production was common for most of the farms in pre-conflict times, as per information from the survey and in related discussions. The maximum number of sustainable businesses is initially set at 1250. Given the infrastructural improvements and in the context of the pre-war economy when tourism was a thriving sector, the maximum number seems plausible over the simulated period. The model considers a time of five years (60 months), as a medium-term revival framework.

Growth in the number of tourism businesses drives up tourism wages. The monthly tourism wage as noted in the forthcoming list of equations is given by $W = 40 + 0.001 T$. The intercept relates to the above mentioned \$40/month wage and wages rising with growth in T , the total tourism businesses. The net expected tourism wage is the actual wage less costs or expenses borne by workers in the sector (C_T), adjusted by the probability of getting a job in the sector (this probability is given by $0.00055T$). However, it is possible that employers hire people from outside the district. In practice, labour movements can take place from outside the region, but growth will still have a slight upward pressure on wages. However, it is assumed that the total number of workers does not change

⁹³ Logistic function is explained by Lim & Saw (2006) as follows: initially the number of operating firms is small, but with expansion in the market new firms enter, and growth accelerates. Ultimately, the growth rate declines as the industry becomes saturated, when the number of firms reaches the upper limit that the industry can sustain.

over time. There is no possibility for more workers to enter the system or for the number of workers to decrease (Grasso, 1999).

If agricultural output rises due to infrastructural development, prices fall, assuming there is no big upsurge in demand. This leads to changes in profits per agricultural worker. Agriculture profits per worker per month (π_A) are calculated as output (tonnes) per worker per year, divided by 12 months, all multiplied by the price of agriculture/tonne, P_A , less the cost/tonne for production (inputs, labour), C_A (refer to the equations list).⁹⁴ The agriculture price equation is modelled based on the actual price-quantity relationships reported by households during the field survey. Production costs for orchards include fertilizers (including micronutrients), pesticides, ploughing or herbicides, pruning and irrigation, less the assumed production benefits accruing from infrastructural development. The positive impacts of benefits resulting from infrastructure services are part of the growth equations for agriculture and tourism businesses. The coefficients of these impacts for per unit growth rate in agriculture give a plausible overall sectoral growth rate in modelling results as informed by field discussions for the pre-conflict periods. It is to be noted that as income increases, the increased financial capital enables farmers to spend more on inputs and productive physical capital for further income increase.

The relative net returns for workers determine the inter-sectoral labour allocation. These follow the worker's decision about whether to work more in agriculture (N_A) or in tourism (N_T). The allocations are based on the following equations:

$$N_A = \frac{N}{2} (1 + d), N_T = \frac{N}{2} (1 - d), \text{ and } N = N_A + N_T$$

where N is the total labour force of 10,000 workers in the simulated unit. The term d refers to the ratio of profit difference per worker among the two sectors. For this model d is calculated as: $d = (\pi_A - W^T) / \pi$, where W^T is the expected monthly wage in tourism and π equals $\pi_A + W^T$. The numbers employed in both sectors depend upon the ratio of profit difference (d) in wages between the two sectors, given that total employment remains unchanged. It is assumed that if $d = 0$, labour is

⁹⁴ Lim & Saw (2006) suggest using the functional form of the agriculture price equation. The simultaneity problems in the simulation do not allow multiplying agriculture output/worker by the number of agricultural workers to determine total production. The output per worker is scaled to derive total agricultural production.

distributed evenly across agriculture and tourism. However, the ratio of profit difference between two sectors (d) is not equal to zero as found in data and through observation in Swat. Changes in profits occur due to increased food production and workers re-allocate their labour across the sectors. This will have impacts on employment levels and on sectoral growth rates. In the case of agricultural growth rate, for example, a shift of workers from agriculture to tourism businesses is to have a relatively small impact on production. This is due to the diminishing or low marginal productivity of shifting workers in agriculture as discussed above. The key simulation equations are presented next.

Scenario 1: The baseline model

The key simulation equations for Scenario 1 are given below.

Agriculture Sector (A)

Growth rate of agricultural output: $\dot{A} = (r_A - r_A A / \bar{A} + 0.25 \times AI + 0.003 \times AE) \times A$

Agriculture output/worker/year: $A = \int \dot{A} dt$

Potential agriculture output/worker/year: $\bar{A} = 1.5 \text{ tonne/worker/year}$

Intrinsic growth rate: $r_A = 0.001$

Price/tonne $P_A = 580 - 150 A$

Cost/tonne $C_A = 180 - 0.4 AI$

Profit/worker/month: $\pi_A = 0.08 (P_A - C_A) A$

Initial agriculture/output/worker $0.7 \text{ tonne/worker/year}$

Initial agriculture employment: $AE = 6700$

Agricultural infrastructure services: $AI = 100$

(Initial \$/month/person)

Tourism Sector (T)

Growth of tourism businesses:	$\dot{T} = (r_T - r_T T / \bar{T} + 0.00005 \times TI)T$
Tourism businesses:	$T = \int \dot{T} dt$
Maximum businesses	$\bar{T} = 1250$
Intrinsic growth rate:	$r_T = 0.001$
Tourism work cost (\$/month):	$C_T = 15 - (100 \times 0.01)$
Tourism businesses wage/month:	$W_T = 40 + 0.001 T$
Net expected wage:	$W^E = (W_T - C_T) 0.00055 T$
Ratio of difference in remuneration/worker	$d = (\pi_A - W_T) / \pi$
Initial tourism business employment:	$TE = 3300$
Tourism infrastructure services: (Initial \$/month/person)	$TI = 100$

Employment (N)

Total employment:	$N = N_A + N_T = 10,000$
Agriculture:	$N_A = \frac{N}{2} (1 + d)$
Tourism:	$N_T = \frac{N}{2} (1 - d)$
Ratio of profit difference per worker	$d = (\pi_A - W^T) / \pi$
Total profit/worker	$\pi = \pi_A + W^E$

Initial Conditions

Agriculture production (tonne/worker/year):	0.7
Number of tourism businesses:	625

7.6 Results and Discussion: Why Recruit?

The simulation modelling seeks to dynamically characterise the behaviour patterns of parameters representing annual agricultural production, profits per worker and resulting labour movements across the two sectors in post-conflict Swat. The simulation objectives include observing changes in the growth of tourism businesses and employment over the simulation period. These changes will be dependent upon the net expected wages in both sectors. The modelling experiment selects infrastructure services as the potentially most relevant parameter to shock the regional economy. The baseline simulation assumes an amount of US \$100/month of infrastructural services per person, which independently influences the growth of agriculture and tourism businesses. An initial equal dollar value helps to evaluate both the effect of improvements in each sector and their reinforcing impacts on the economy overall. For example, improvements in irrigation systems are helpful for increased agriculture production. Better tourism infrastructure is likely to attract more tourists and in a reinforcing way, the market potential of agriculture production will increase locally.

The figures below illustrate the time paths for production, growth of businesses and employment. Infrastructural development services have positive impacts on the growth of agriculture output per worker, and thus on agriculture production. Figure 7.2 shows that food output, from an initial 0.7 tonne/worker/year, increases substantially to 1.05 tonne/worker/year, which represents about 34 percent growth in the simulated time. The results conform to the findings during interview responses and field discussions in 2010, of agriculture growth averaging above 6 percent per year in the pre-conflict period in Swat.

Positive impacts are not limited to agriculture: tourism businesses also grow substantially. From the initial number of 625 tourism businesses, there is an increase to 865 businesses in the simulated period, a 28 percent increase in the simulated period and on average above 5.5 percent annually (Figure 7.3). The growth in tourism businesses is conditional upon an increase in number of tourists, which are not expected to increase much in the short run. As infrastructural services improve, the pull factors for tourism will increase in Swat.

Figure 7.2

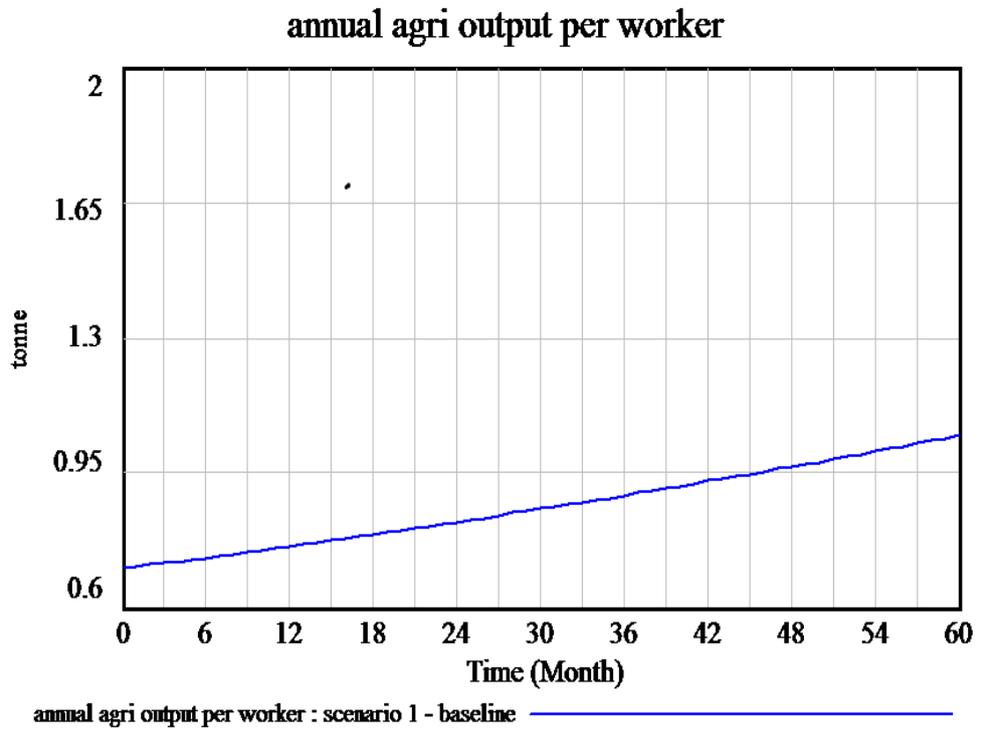


Figure 7.3

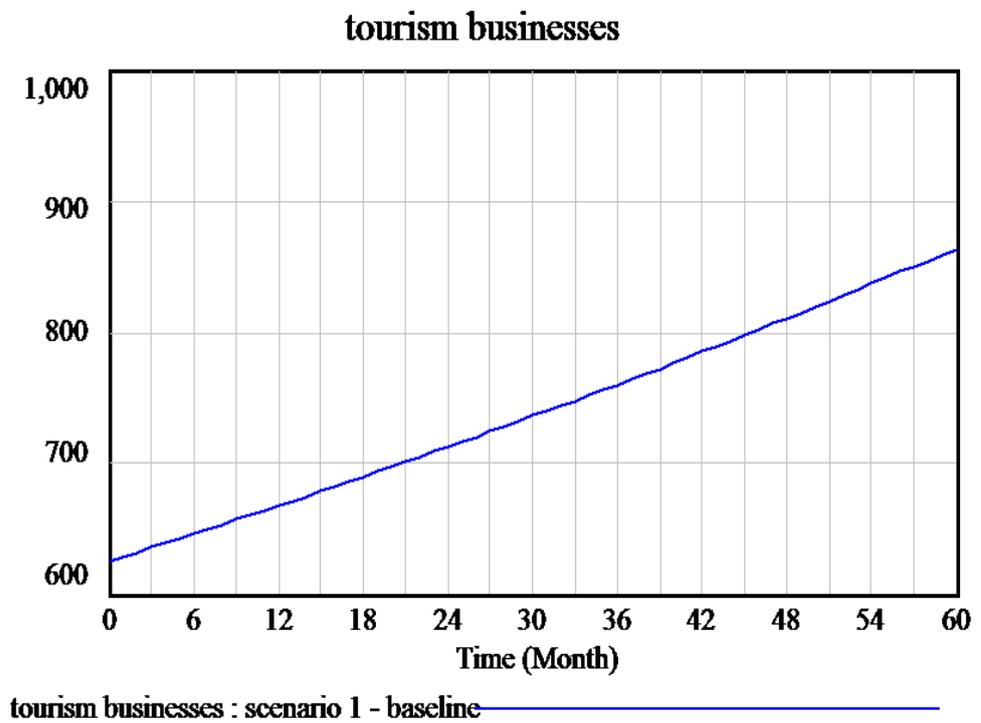


Figure 7.4

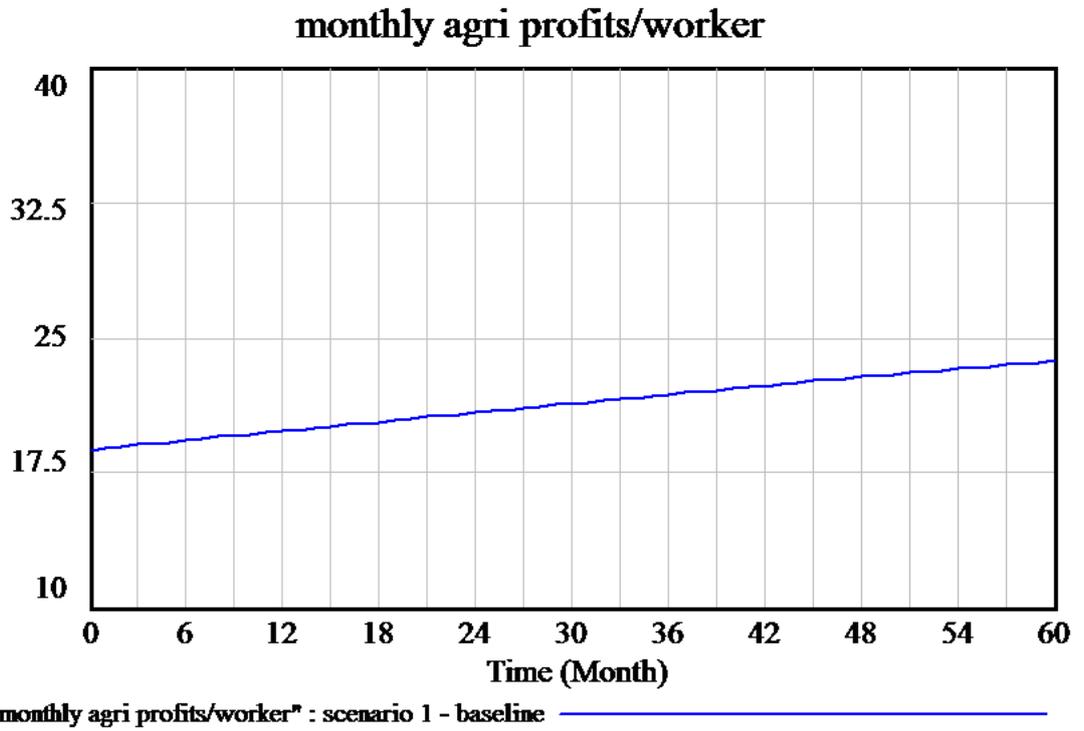


Figure 7.5

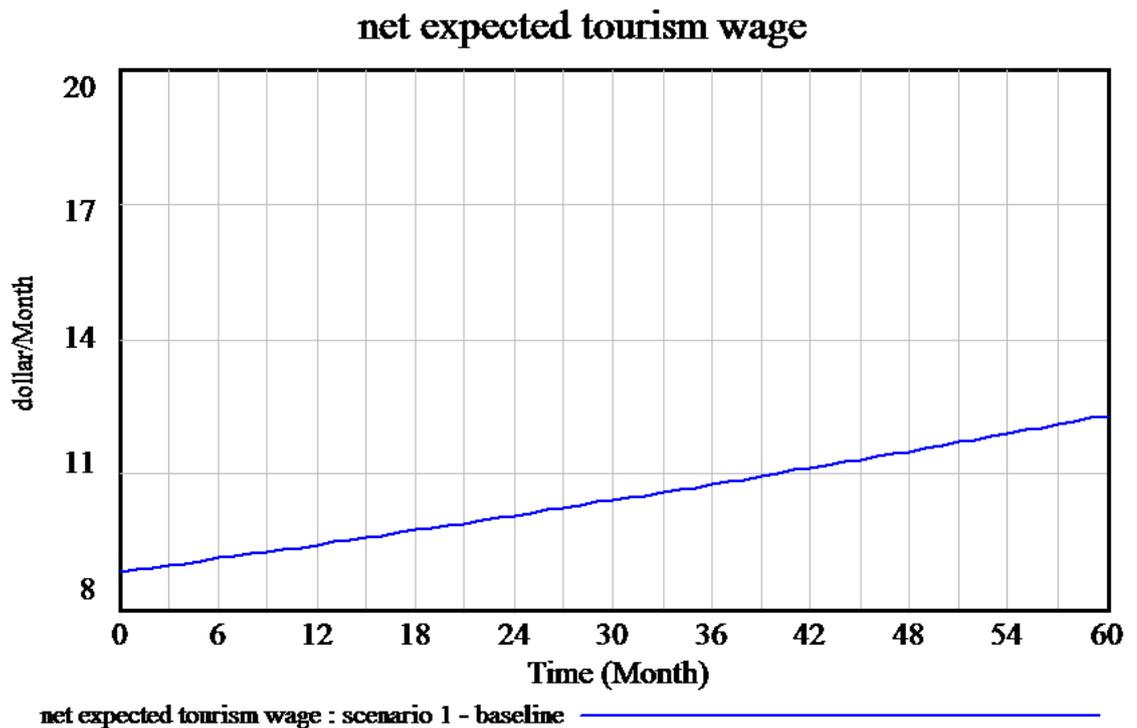
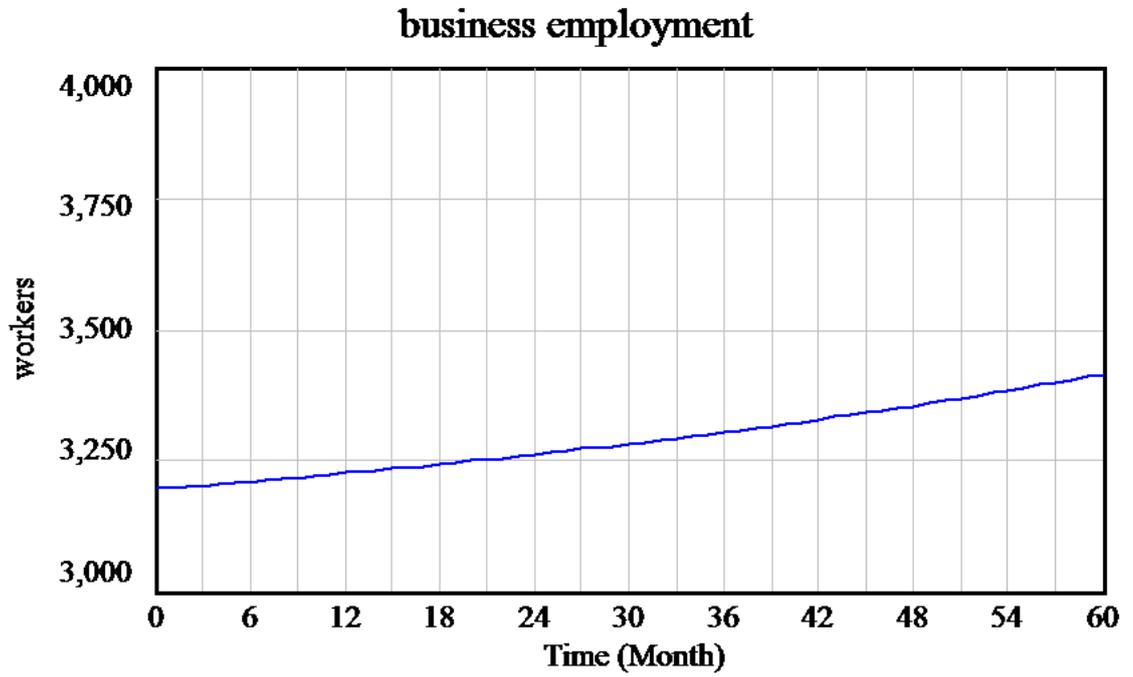
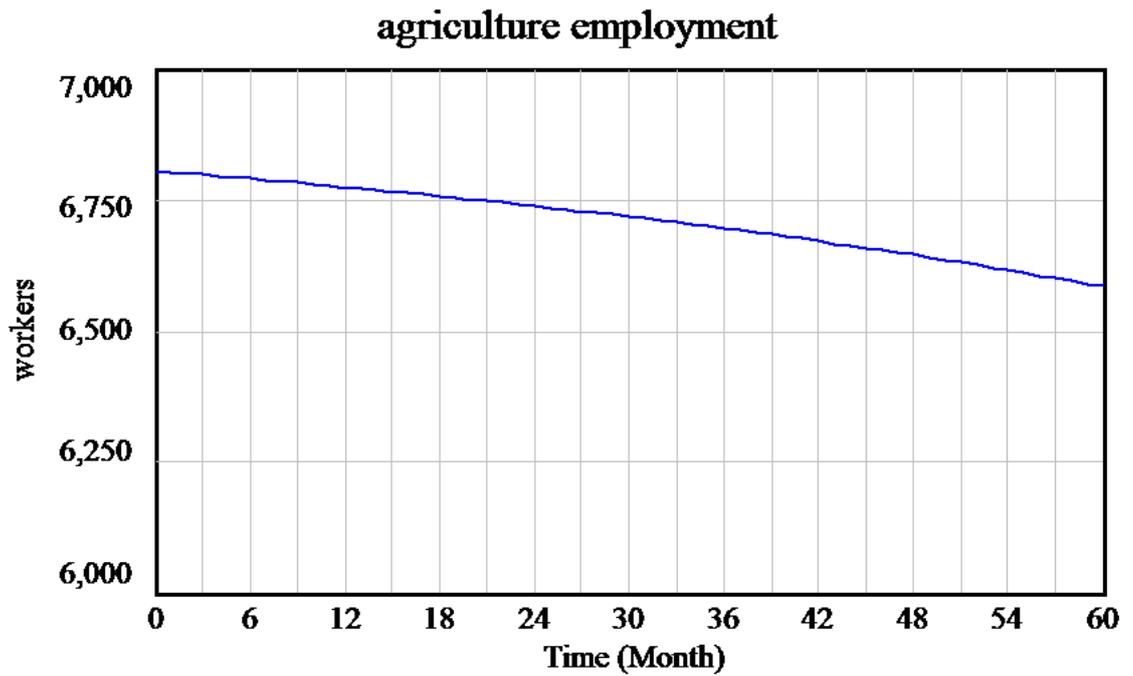


Figure 7.6



business employment : scenario 1 - baseline

Figure 7.7:



agriculture employment : scenario 1 - baseline

Workers' remuneration increases in both sectors but at a faster rate in tourism businesses where net expected tourism wages increase by 28 percent at the end of the simulation period (Figures 7.4 and 7.5).

According to the fundamental hypothesis, labour allocations take place depending upon profits per worker (Figures 7.6 and 7.7). Some labour shifts from agriculture to tourism businesses. The factors accounting for this labour movement are described in the sections containing background discussion about employment (particularly in section 7.4), based on the survey data results. One crucial aspect is how the rise in production affects prices. Prices over the five-year simulation period with increased production decrease by more than 12 percent per tonne.

A significant role of the growth in agricultural profits is that financial capital will not only contribute to its own growth but will also add to the intrinsic growth rate of businesses. More profits will increase consumption expenditure, which directly and positively affects the growth of the business sector. In other words, increased profit creates incentives for the rural community to adopt a better standard of living. The positive growth outcomes and employment opportunities observed in the simulation address the challenge to create barriers to any monetary incentive associated with recruitment to the Taliban.

7.6.1 Why Recruit?

There are various incentives to become a militant. Militancy in Swat had a declared ideological motive to enforce sharia law across the district and adjoining areas. Militants considered this was possible by getting control of the region. To gain support, the Taliban militants highlighted religious sentiments like declaring their movement in Swat and in neighbouring Afghanistan to be a jihad between infidels and Islam. Moreover, as discussed in Chapter Three (section 3.6), the militants made social and economic promises such as delivering quick justice, driving out the big landlords or Khans, and making equitable distribution of land to the landless (Khattak, 2010). Economic and social disparities acted as catalysts for initial support and recruitment to the Taliban in Swat (Mehmood, 2010). In particular, the promise of land distribution attracted many followers.

Teenage boys and young men were recruited to roles ranging from scouts to suicide bombers due to multiple push factors. Khattak (2010) identifies that many joined because the attached power of guns, money and respect allowed them to settle personal scores with their opponents (mostly influential people). The Taliban also used coercion in recruitment: parents in remote villages were ordered to send one male member to join the militia. Those who refused to comply were threatened with eviction (Meo, 2009). Further, the media reported in 2009 that the Taliban started forcing schoolchildren to sign as fighters, informants, or suicide bombers. The Taliban leadership denies such reports and insists their battle is for faith, not for material ends (Siddique, 2010).

Genuinely rooted grievances about economic hardship and inequalities in the past are not easily forgotten (Sen, 2008). Such a situation applied in Swat, where economic and social exclusion for the marginalised was significant, spanning long periods of time.⁹⁵ In addition, abuse and unfair treatment from the counterinsurgent forces during the civil war incited support for the militants and increased recruitment. These factors contributed to seeking justice (economic and social), security, and revenge by participation in the militant movement (Qazi, 2011). Conflict severely affected livelihoods and had negative repercussions for household income and employment in Swat. The army, during its counterinsurgent operations, depended heavily on aerial power and artillery that led to further extensive infrastructural damage and civilian casualties. The government was unable to provide economic and employment alternatives, both initially and later. The resulting increase in vulnerability, infrastructural destruction that restricted movement, and limited opportunities in formal sectors, emerged as prominent economic incentives for recruitment. People supported and joined, as the Taliban told them that their lives were worse and the Taliban could make it better. Owen Bennet-Jones, in a remarkable documentary for BBC television, visited Swat and interviewed some Taliban fighters in Mardan city prison.⁹⁶ He concluded that poverty, lack of economic development, and infrastructure were the main reasons which led some Pakistanis to think that the

⁹⁵ Refer to discussion on income inequalities in Swat from a historical perspective in Chapter Three

⁹⁶ Titled "Pakistan inequality fuelling Taliban support", Retrieved from <http://news.bbc.co.uk/2/hi/programmes/newsnight/8681024.stm>

Taliban could do better for them. A Taliban recruit explained to Bennet-Jones that by getting land from the Taliban his family could have sold the land and got the money. These remarks emphasise that the dispossessed joined the Taliban as they offered escape from generations-old poverty traps.

The alternative but significant question of ideological radicalisation as a motivation for recruitment is complex to answer. For example, the leadership of the Taliban (shura) and the hierarchy of amirs (commanders) have different reasons to be permanent members of the militia. Threats to their lives and the chance of being captured by security forces are consistently part of their anti-state activism. With these risks, the motivation of income alone may not be a sufficient explanation. Similarly, ideological motivation can be a likely factor for militants having long associations with the Taliban, and holding important portfolios in the organisational structure, which consists of different committees. Roggio (2010) identifies these as military, finance, political affairs, prisoners and refugees, and recruitment. The Taliban sometimes release video recordings of suicide bombers' departing messages before suicide attacks. Meo (2009), reports one such video in which a teenage boy says, "some hypocrites (a reference to government claims that families of suicide bombers are paid after attacks) say that we are doing this for money but we are told by Allah to target these pagans." While for suicide attackers, ideological motives are supreme, for rank and file recruits or foot soldiers, the push factors in recruitment may not solely be ideological, as discussed earlier. Qazi (2011) notes that young recruits, including many suicide bombers, are usually poor, uneducated, or seminary students. Sen (2006, p.145) comments, "Poverty and economic inequality may not instantly breed terrorism or influence the leaders of terrorist organizations, but nevertheless they can help to create rich recruiting grounds for the foot soldiers of the terrorist camps".

Ideological consensus with the Taliban's views was found mostly lacking at the household level in post-conflict Swat, from the survey findings in Chapter Five. The Taliban strictly oppose female or even male formal school education. However, when people were asked whether girls should receive formal education, they responded overwhelmingly in favour. It is very relevant to mention that this survey finding is in conformity with the election results in 2008 (held when the

Taliban were occupying most areas). The majority of voters in the province and in Swat voted for a secular and democratic party, the *Awami* National Party (Peoples National Party) (ANP), which remained in power in the province from 2008-2013.

It is hard to quantitatively analyse the different subjective push factors to join as militants, which include revenge in local settings, the military's maltreatment of many, the level of ideological consensus, fear of repercussions for failure to join, and even a sense of adventure. From the above discussion and because rank and file fighters and others in the organisational structure of the Taliban receive salaries and other economic benefits (Khosa, 2009; personal communications, September 2010; Qazi, 2010; Rodriguez, 2012),⁹⁷ the likely explanations for recruitment focus on concrete economic factors, which as discussed in previous sections of this thesis, fuelled the Taliban insurgency in Swat.

These factors include inequality and lack of opportunities in the economic and social system (particularly land holdings), a very low incidence of secondary or higher education, and involvement either in underpaid employment or the absolute unavailability of employment for the educated. All or some of these factors may have worsened in the post-conflict damaged economy. Such a situation demands implementation of an integrated developmental framework, which supplements growth and employment in major economic sectors. In addition job creation in formal public sectors (including employment in security forces)⁹⁸ can complement job opportunities in the private sector to reduce the risks of joining the militants. Continuing from the earlier baseline analysis, the next simulation modelling section will observe the impacts of various shocks to the regional economy, and aims to find potential solutions for the revival of livelihoods in Swat. Livelihood revival links with the subsequent decrease of income-based push factors for recruitment to militant organisations.

⁹⁷ The amount of salary received had a reported range of US \$25 to \$150 per month, depending upon the nature of tasks in the first year after recruitment

⁹⁸ In Afghanistan employment opportunities were created in rebuilding Afghanistan National Army (ANA) not only for former Taliban fighters, but for unemployed youth. They were given salaries in range of \$15 to 170 per month during first year of joining the ANA. Retrieved from <https://www.understandingwar.org/afghanistan-national-army-ana>

The exogenous assumption held for modelling the following scenarios is that funding is available and an efficient implementation mechanism is in place, to achieve development goals for the revival of sustainable livelihoods in post-war Swat. A prioritised focus is required from both the government and major international donors. The underlying assumption is that the revival of conflict-affected livelihoods is crucial in reducing the chances of another outbreak of militancy in the region.

7.6.2 Individual Infrastructural Services Shocks

In the next modelling experiment the amounts spent on agricultural and tourism business infrastructure services per person/month were separately increased to see the effect on the variables, which were discussed in the baseline model. This separate hypothetical treatment enables identification of whether these form better livelihood revival options by comparison with combined shocks to both sectors.

Initially only agricultural infrastructure services were increased, from US \$100 to \$140 (40 percent increase), with the tourism business infrastructure retaining the same dollar value as in the baseline model. This percentage increase is very close to the total annual development budget of Swat district from 2011-2012 to 2013 - 2014 for agriculture, which amounts to approximately a 35 percent increase for agriculture alone. If expenditure on public health engineering⁹⁹ is included that in total, the increase is about 64 percent over the previous year.¹⁰⁰ In this model, agricultural employment increases and tourism business employment falls more than six percent, compared to baseline model. The outcome from this shock is that tourism businesses and expected tourism wages remain unchanged when compared with the baseline model. Regarding outcomes in the agricultural sector, agriculture profits/month/worker increase by nine percent, and annual agricultural output increases by nine percent, by the end of the simulation period. This increase in agricultural production is less than the decline from the pre-war period. That was also found during field discussions and as Zahid (2009) estimates, for very good farms producing apples, walnuts, plums and peaches, production losses ranged from 20 to 50 percent (and sometimes even more) in the

⁹⁹ Public health engineering includes improvements in rural water supply and sanitation. Pakistan and India have set up these departments for water supply programmes.

¹⁰⁰ These figures are taken from the Finance and Planning Department in Swat. Retrieved from http://www.swat.financekpp.gov.pk/index.php?option=com_attachments&task=download&id=40

post-war era. However, in reality not all farms have the same level of production, so the estimated increase in the simulation outcome is quite realistic and represents an average increase.

In an alternative modelling shock, the level of infrastructure services was increased by 40%, but only for tourism businesses such as sports festivals and improvements in local cultural heritage (both ancient and modern), while the input for agriculture remained the same as in the baseline model. The results indicate that employment increases by about eight percent in tourism businesses, whereas for agriculture it decreases by more than four percent. The overall growth in businesses indicates that their number increases by 12 percent, and wages increase by 13 percent over five years. This resembles the earlier shock to agriculture alone, where growth in the other sector (tourism businesses) remains similar, and agricultural profits and output in the second experiment show an almost similar outcome to the baseline model.

Overall results from the above separate shocks indicate positive changes only in the sector where the shocks are applied. These changes do not seem abrupt: for example, changes in employment, output, and number of businesses have growth percentages very similar to those found during field discussions about the local tourism economy. However, these may not be very appropriate in the context of Swat's economy, where both sectors were much affected by the conflict, and were thriving in the pre-war era. The likely revival of both pre-war dynamic sectors is the objective in the simulation modelling, derived from the cluster and livelihood analysis detailed in Chapter Six. The next sub-section looks at viability of livelihood improvements where both sectors undergo simultaneous positive shocks in the modelled hypothetical economy of Swat.

7.6.3 Scenario 3 - Combined Infrastructural Shocks

In scenario 3, the investment in agriculture-related infrastructure is increased by 20 percent (\$100 to \$120) and in tourism-related infrastructure by 40 percent (\$100 to \$140). These combined positive infrastructural services shocks are applied to investigate the growth-orientated supporting factors between these vital sectors of Swat's economy. For example, improved roads and transport networks, and better public facilities resulting in more tourism, facilitate both sectors with

increased demand factors. Alternatively the infrastructure services specific to agriculture include improvements in irrigation, and in services and training, which improve farm management. Figures 7.8 to 7.12 present the comparative results from this positive shock over the five-year period. The results complement the background expectation for this combined shock. Sustainable livelihoods associated with both sectors significantly improve over time. The results indicate that agricultural production/worker and number of tourism businesses grow simultaneously. Profit per worker also increases in both sectors, with a higher percentage increase in tourism businesses. In alignment with the theoretical assumption, higher profits in tourism attract more workers, and these increase by about three percent at the end of the simulation period (Figure 7.13). Labour movements from agriculture to more profit-orientated tourism sector businesses are in agreement with the survey data findings, where such movements were expected from analysis of the reasons for not being employed or for being underpaid as discussed in Chapter Five, sub-section 5.2.1.

Figure 7.8:

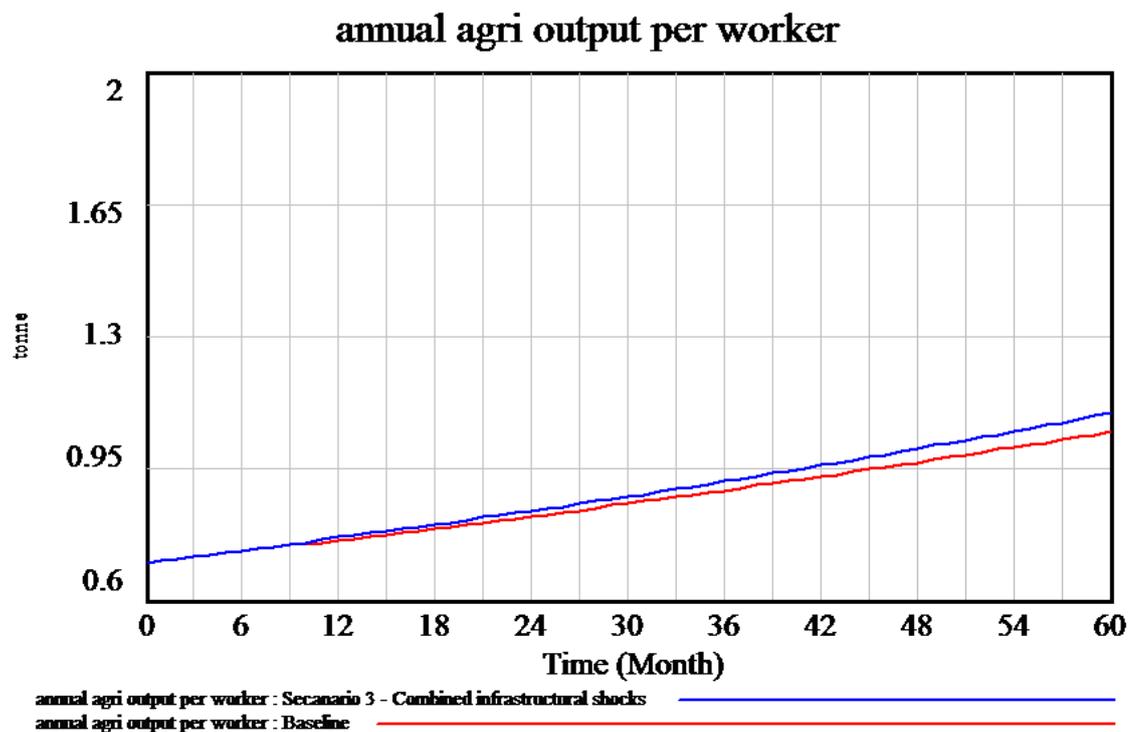


Figure 7.9:

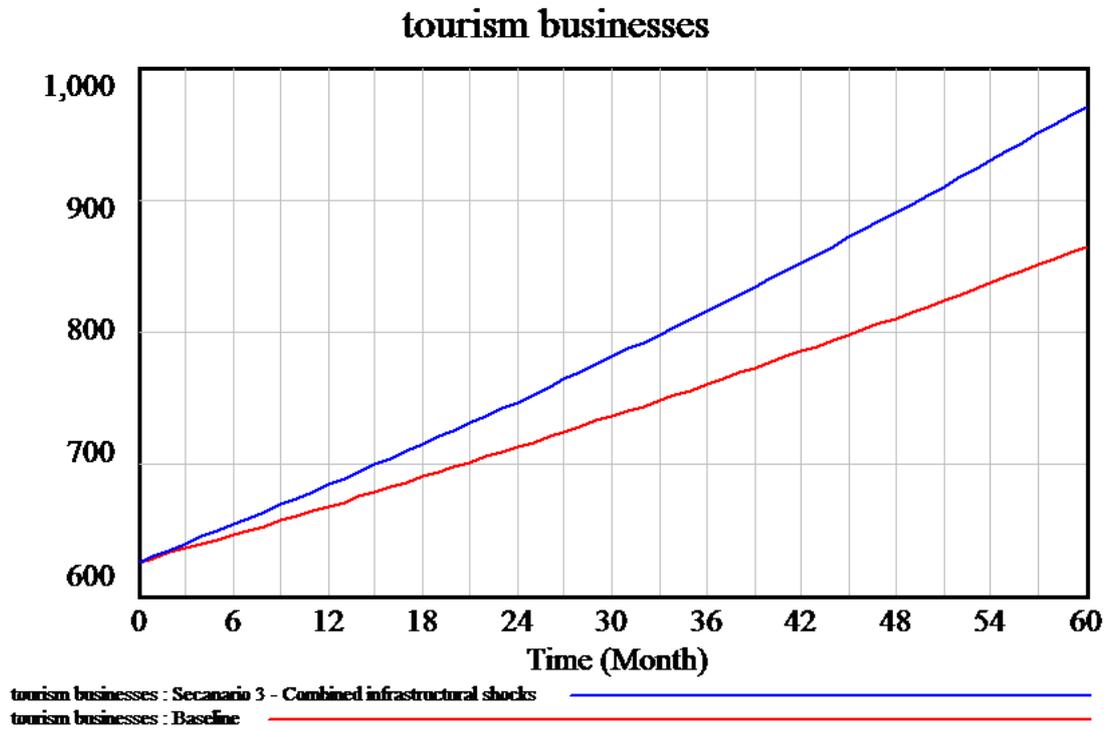


Figure 7.10:

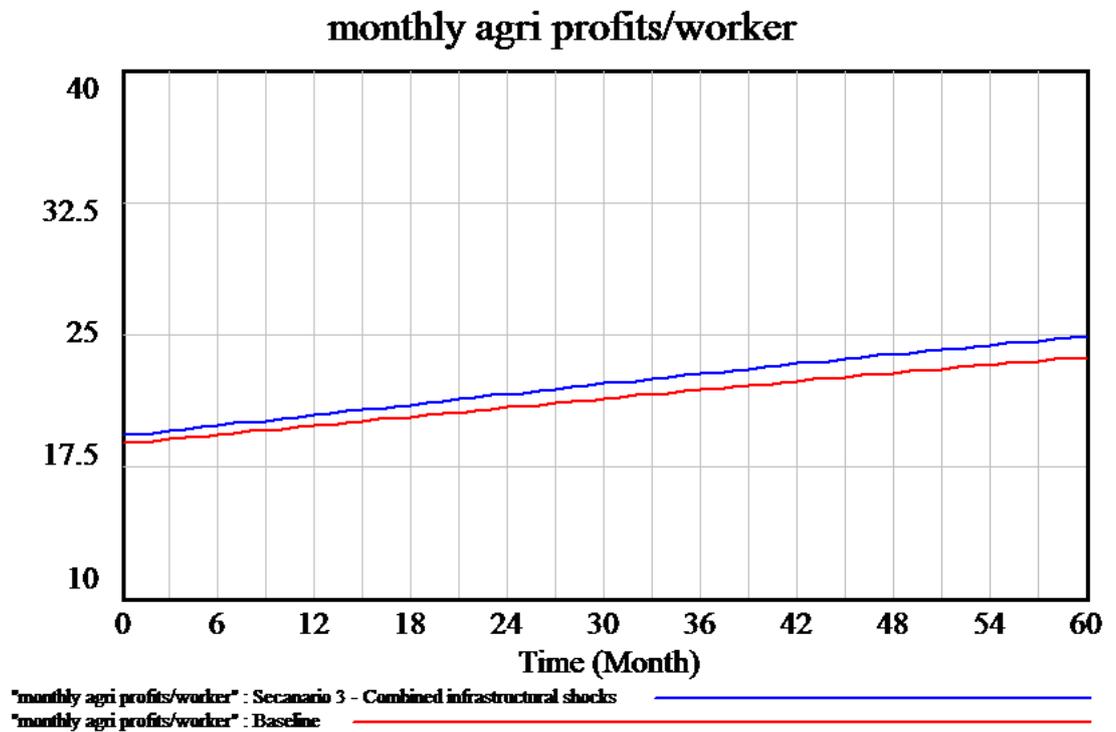


Figure 7.11:



Figure 7 12:

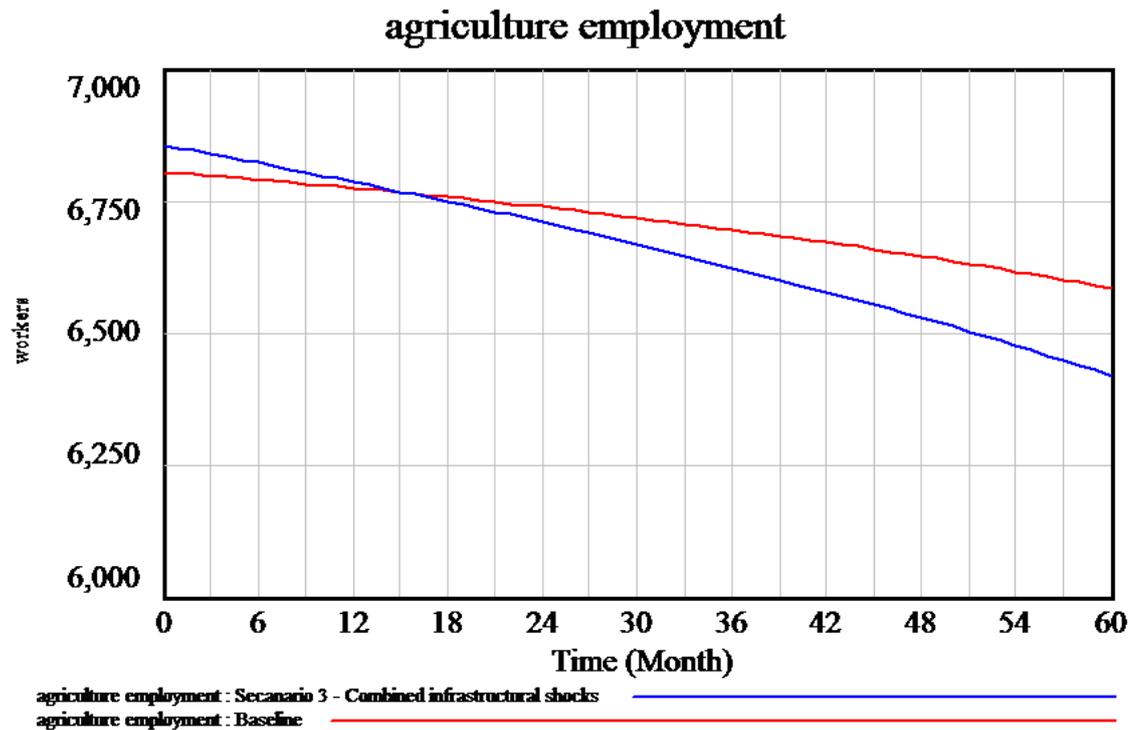
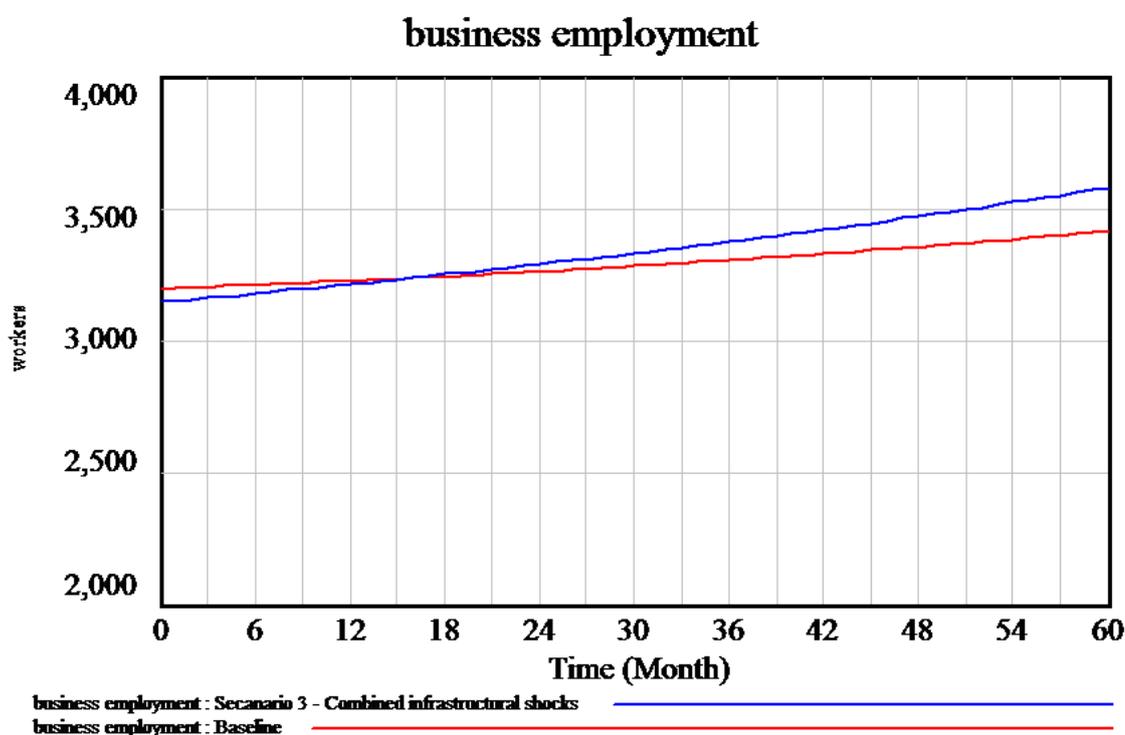


Figure 7.13:



7.7 Conclusions

Livelihoods once shattered are hard to rebuild, particularly after a violent shock, such as that which occurred in Swat. Rebuilding involves substituting capabilities and increasing the asset base of households. This may be difficult, at least in the short to medium term, in view of the loss of assets and limited post-war opportunities. Recovery requires structural interventions, which may assist people in asset enhancement and early livelihood recoveries, at least enabling them to pursue their pre-conflict livelihoods. This chapter addresses these issues in a needs-specific context, and presents quantitative estimations of livelihood revival outcomes in Swat district. It focuses on a livelihood enhancement framework, which may decrease the chances of recruitment to the militants (Taliban) out of economic necessity.

This chapter discusses the multiple push factors for recruitment to militant groups. If reasons lie in ideology, revenge or similar motives, then these are complex, and Sen (2008) considers they require a complete paradigm shift on behalf of the state

to focus on issues which are of economic concern to the people (poverty and inequality). Sen (2008) terms this shift in focus “the role of conscious politics” which can act as a barrier to violence related to ethnicity and religion. Earlier discussion in Chapter Three highlighted that the Pakistani state often used religion and related militancy for short-term gains: such policies now are having serious repercussions.

If adverse economic conditions are what drive people to join the militants, then different solutions may be required. Chapter Two found that contemporary incitements, particularly economic development failures, low income and lack of rights, are strongly linked with outbreaks of violence.

Reasons for joining the Taliban may be a combination of both sets of factors. Militancy and resulting recruitment are of course not a one-off phenomenon, and they may last until plausible grounds and grievances are realistically addressed. Thus, my approach in this chapter has been two-pronged, addressing infrastructural development directly and highlighting approaches such as alternative job creation in expanding livelihood opportunities that complement positive infrastructural interventions.

Developmental interventions in the regional economy provide modelling outcomes that increase profits, output, and growth in both agriculture and tourism businesses. Labour shifts accordingly. It may be argued that if the pre-conflict economy was functioning well, then why did the Taliban occupy the district and succeed in getting local recruits? The question has been discussed in previous chapters, and some explanations offered. First was their militant power, which created an environment in which only the Taliban could flourish. In addition to this, the economic, judicial and social systems in Swat were slow-acting and lacking in competence. Further, state institutions under the military dictator, General Musharraf, did not adequately evaluate the repercussions and made compromises with the Taliban. Finally, the locals were unaware of the governance style which was to be imposed in Swat.

Some of the push factors for recruitment have already subsided: democracy currently prevails and local needs can be better evaluated, so the general

ideological support for the militants is less likely to exist. The simulation modelling concludes that with a broad range of infrastructural improvements, livelihoods can improve once again. Labour positively shifts to profit-orientated formal sectors, breaking the constraint of working for low pay (a strong incentive to recruit). This is highly likely to decrease the income- and employment-based push factors for recruitment. This seems probable in the context of examples relating to alternate livelihood choices made by former fighters. Militants, as mentioned earlier (section 7.6.1), were getting salaries ranging from US \$25 to \$150 per month depending on the nature of their work and their experience. Income higher than the minimum recruit salary is likely to create more incentives for participating in formal wage work. In a rehabilitation centre at a deradicalisation programme set up by the government in Lahore, 300 hard-core and rank-and-file fighters undertook a three month programme, in which they were taught peaceful Muslim teachings along with receiving vocational training. Rodriguez (2012) reports that after completion they went back to their hometowns and villages, were awarded a stipend of US \$255 for the programme and if required, given interest-free assistance for being self-employed. In Swat, the army set up a school for rehabilitation of former fighters, called 'Sabawoon.' Rodriguez (2102) reports army officials as saying that once the former militants were trained as technicians, carpenters and plumbers, they were no longer idle and became part of society. They had been targeted by the Taliban for recruitment and joined when they were unemployed or underpaid.

Finally, some government interventions in the post-conflict period have involved positive policy initiatives for people in Swat. The formation of seven tehsils from the former two in Swat district (decentralisation of authority), has been particularly beneficial for people living in remote areas. They do not have to travel long distances to visit public offices and to seek solutions to problems relevant to state institutions. This saves both time and money. The militants, in their early slogans, exploited the gap between people's grievances and delivery of assistance from public institutions to gain support.

Communities can still be hit by other external shocks, as experienced by the people of Swat in the form of severe rains and floods in 2010. The prospect of

natural disasters strengthens my case for infrastructural development and for creating off-farm employment opportunities. Without urban-based jobs, losses in farm output may lead to more vulnerability and increase the likelihood of household members considering joining militias. Moreover, increases in farm income also increase business expansions. Lim and Saw (2007) note that with rising income, farmers can increase spending on inputs, equipment and consumer goods, which are provided by industries, and these industries in turn also support agricultural development. A close connection then emerges in which businesses and agriculture can expand alongside each other.

By understanding the dynamics of the improvements in various infrastructural services, villagers will be in a better position to evaluate the worth of infrastructure projects and related services. Some of these may come at the expense of providing short-term individual household assistance, which is currently the preference and practice during re-settlement programmes in post-war Swat. If complaints arise, the current democratic environment is conducive to accommodating and listening to people's grievances. As agriculture income increase overall, the financial returns to other service providers such as health and education and the provision of more physical infrastructure will increase. These have the potential to attract more resources and investment to the rural areas and to the Swat district overall.

Chapter Eight

Conclusions

8.1 Key Findings and Policy Implications

The findings of this thesis suggest several conclusions. These relate to the onset of violent conflicts in countries at a global level. These findings explain the repercussions of conflict for households, and suggest appropriate interventions in reviving livelihoods in the post-conflict economy of Swat, Pakistan. The conclusions in this thesis are expected to have wider policy implications. The key methods, resulting findings, and their implications follow.

First, an extensive analysis for different sets of countries modelled the outbreak of conflict and its links with income, some widely accepted development indicators, and democratic rights. Shortcomings in the necessities for development, including low income and decreased health status, literacy rates and democratic freedom were strongly linked with onset of violent conflicts the cross-country global investigation. These determinants of conflicts are found in other studies too. However, combinations of income, well established development indicators and lack of freedom had not been analysed in previous research attempts, establishing their links with violent conflicts globally for various sets of countries. The selected study period had also not been the focus of earlier research, although the paradigm of global conflicts changed after the September 2001 terrorist attacks in United States. In this paradigm shift, Muslim countries are considered the likely breeding places of international anxiety about the origin, recruitment, training, and financial sourcing of terrorism. Muslim countries are widely believed to be the source of revenge terrorist acts across the globe, mostly emerging from their internal economic and political problems, for which they put the onus of responsibility on developed countries, particularly the USA. Thus the focus of this research was made specific to the Muslim majority countries to develop an understanding of what results in the occurrence of conflicts, and whether these links are substantially different from or similar to those found for countries in the larger global sample. This study found that not many stark differences exist: conflicts globally originate from poverty, lack of rights, weak institutions, limited

education and marginal health infrastructure, in both Muslim and non-Muslim countries.

Secondly, literature examining post-conflict effects at household and individual levels includes studies covering different conflicts and their various micro perspectives. The recent conflict in Swat has remained, so far, not a focus in conflict-based economic literature. Conflict in Swat had a Muslim identity and objective (of implementing sharia), and had large repercussions on people, households and on the regional economy. The conflict in Swat and other areas associated with the Taliban has so far resulted in more than 46,000 casualties and large-scale damage to infrastructure and institutions. Based on household survey information from Swat, Chapter Five provided the asset portfolio, including quantitative descriptions of losses to human, physical, natural, financial and social capital for conflict-affected households. In addition, income and consumption patterns and subsequent changes in the post-conflict period were described. Chapter Five concluded that violent conflict in Swat had serious negative repercussions on household assets, and on their income and expenditure patterns: their income decreased and expenditures increased in the post-conflict period.

Household assets act as building blocks to form different livelihood choices. Chapter Six investigated the post-conflict household livelihood choices with a damaged asset base in Swat. This analysis of livelihoods in post-conflict Swat is the first of its kind, using household data, clustering and econometric techniques. Initially, using a clustering method, households were grouped into clusters on the basis of their dominant share of income originating from major earning sources. The distinct household clusters were econometrically analysed for the effects of various assets in making post-conflict livelihood choices. This analysis extended the findings of Chapter Five, and provided conclusions about specific effects of asset endowment on particular livelihood choices. A combination of the findings of Chapters Five and Six suggested that households had limited assets and thus low livelihood substitution capabilities and were experiencing constraints in adopting more remunerative livelihood choices. Losses in assets, lack of financial capital and savings, and limited employment opportunities left them vulnerable. Post-conflict low-return livelihood choices of agriculture and tourism were

identified and it was noted that these were better performing pre-war economic sectors in Swat. These hard-hit livelihood choices for revival were found to be dependent on asset accumulation and on overall infrastructural improvements. This suggests the need for a development policy framework which not only identifies the worst-affected economic sectors, but also forms and implements policies which target the revival of the largest and most affected sectors (agriculture and tourism) which remain crucial for the enhancement of livelihoods and in employment creation in post-conflict Swat.

Thirdly, Chapter Seven exclusively focused on livelihood revival possibilities. The complex interactions of assets, their enhancement, and likely post-conflict impacts from infrastructure development on livelihood revival were investigated. Simulation modelling of infrastructure developmental shocks resulted in increased employment and wages and subsequent movements of underpaid labour into profit-orientated sectors. Such profit-orientated movement among formal sectors has the potential to reduce the income-based motivation to join militia groups (the Taliban). For these time-specific and quantitatively estimated outcomes, visualised in a dynamic simulation environment, various shocks of broad-based infrastructural development services were investigated. The approach used consisted of infrastructural development directly, which complemented alternative job creation and labour allocation towards more profit orientated sector. A combined increase in infrastructural services values for the major sectors (agriculture and tourism businesses), in Swat's economy, provided integrated growth outcomes for the production of agricultural output, and in terms of number of businesses and profits per worker, in both sectors. Labour shifted to profit-orientated sector, tourism businesses. These outcomes address both post-conflict household livelihood enhancement and the related decrease in income or low paid employment which act as push factors to join militant groups. Based on quantitative conclusions, the recommended post-war resettlement interventions are different from welfare-based targeted assistance, which are region and time specific. Welfare-orientated programmes were adopted both by government and most of the international donors dealing with post-conflict rehabilitation. The survey findings revealed the limited reach of this form of rehabilitation assistance. The limitations of these programmes were discussed, and the development

alternative of infrastructural improvement for the economy overall, which not only has long term impacts but has integrated outcomes for livelihood revival was suggested. This thesis suggests that post-conflict interventions and development programmes must carefully examine household-and region-specific requirements, and these requirements should be adequately reflected in the development and rehabilitation strategies adopted.

8.2 Future Research Needs

Future research on the subject should address some of the limitations of this thesis.

First, as mentioned in Chapter Two, the cross-country global analysis has some data limitations. For example, data for the parameters mostly reflects country-level statistics, which may not be reflective of intra-country differences present in different regions. In addition, some data sourced from domestic household surveys and reported by countries to international organisations was observed to be unrealistic. This suggests an apparently difficult future research task, involving similar analysis, which needs to find a set of indicators that more accurately represent the statistical values of the parameters investigated. Another significant outcome in Chapter Two was the identification of lack of consensus on the definitions of civil wars and international terrorism. This requires extended research on defining these phenomena in ways which seem more realistic and current, and are more widely accepted by researchers in this field.

Second, a real limitation in investigating post-conflict effects is that the data represents the post-conflict asset endowment and livelihood patterns. It is quite difficult to use a panel data technique (data from two points of time) in post-conflict studies, particularly if conflicts are associated with displacement of households. On return, they might be not living in the same houses or even in the same villages or towns, depending upon asset losses and available livelihood opportunities. In addition, if pre-conflict data is collected, it is hard in practical terms to predict an end to a particular conflict. The post-conflict livelihood analysis can be extended in some ways by comparing it more extensively with secondary data sources containing pre-conflict statistics on different household

aspects and livelihoods, if these are available. In the case of Swat in Pakistan, such secondary data was not available.

Finally, the proposed livelihood revival framework in this thesis has some exogenous assumptions. These include availability of the necessary financial input to enable positive interventions in developmental infrastructure services, and a commitment to structural improvements. In reality, the post-conflict revival programmes as implemented by the government and assisted by international donor countries and organisations are shadowed by allegations and counter-allegations about finances and mismanagement. From the government's perspective, aid did not arrive as was promised (PaRRSA, 2011), while the donors argued that inefficiencies in implementation and management of different programmes prevented the desired outcomes from occurring. For example, contracts to rebuild schools in Swat were awarded to a handful of construction companies who had strong links to various government departments (Ellick, 2011). This study suggests attending to such issues in future studies in more detail. In conflict rehabilitation programmes, there must be a more explicit resolution of such problems to obtain larger benefits for both the regional economy and individual households, not only in Swat, but anywhere in conflict-affected regions.

8.3 A Final Comment

The research design and modelling techniques in this project could be adopted and applied to study post-conflict livelihood losses and revival in any country or region which shares similar characteristics to Swat and Pakistan. For example the civil war in Pakistan's neighbouring country Afghanistan has many similarities with the conflict in Swat. The militants in both countries are well connected, and can move freely across the border in the absence of any strict border controls. In addition, militants and the affected population mostly have similar religious and ethnic identities. The adopted livelihood asset-based approach in this study and the simulation modelling to identify the livelihood revival possibilities may be useful for studying other conflicts such as in Afghanistan.

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Appendices

Appendix 1

List of 87 Countries with Conflicts: Level 3, 4 and 5 – Global Analysis

Afghanistan	Greece	Russia
Algeria	Guatemala	Rwanda
Angola	Guinea	Saudi Arabia
Argentina	Guinea Bissau	Senegal
Armenia	Haiti	Serbia
Azerbaijan	Honduras	Sierra Leone
Bangladesh	India	Somalia
Bhutan	Indonesia	South Africa
Bolivia	Iran	Spain
Brazil	Iraq	Sri Lanka
Burma – Myanmar	Israel	Sudan
Burundi	Jordan	Swaziland
Cambodia	Kyrgyz Republic- Kyrgyzstan	Tajikistan
Cameroon	Laos PDR	Tanzania
Central African Republic	Liberia	Timor-Leste
Chad	Macedonia, FYR	Thailand
Chile	Madagascar	Togo
China	Mali	Turkey
Colombia	Mauritania	Uganda
Comoros	Mexico	United Kingdom
Congo, Democratic Republic/Zaire	Moldova, Rep. Of	Uzbekistan
Cote de ivory/Ivory Coast	Nepal	Venezuela
Dominican Republic	Nicaragua	Yemen
Ecuador	Niger	Zimbabwe
Egypt	Nigeria	
Estonia	Pakistan	
Ethiopia	Panama	
France	Paraguay	
Gabon	Peru	
Georgia	Philippines	

Appendix 1 (continued)

List of 45 Countries: Level 4 and 5 (severe crisis and civil wars): Global Analysis

Afghanistan	Nepal
Algeria	Nigeria
Angola	Pakistan
Bhutan	Peru
Burma – Myanmar	Philippines
Burundi	Russia
Central African Republic	Rwanda
Chad	Saudi Arabia
China	Senegal
Colombia	Somalia
Congo, Democratic Republic/Zaire	Sri Lanka
Cote d ivory/Ivory Coast	Sudan
Ethiopia	Thailand
Georgia	Turkey
Guatemala	Uganda
Guinea Bissau	Venezuela
Haiti	Yemen
India	
Indonesia	
Iran	
Iraq	
Israel	
Kenya	
Laos PDR	
Lebanon	
Liberia	
Mali	
Mexico	

Appendix 1-A

List of 29 Muslim countries' subset – Conflict levels – 3, 4 and 5	List of 17 Muslim countries' subset – Conflict levels – 4 and 5 (severe crisis and civil wars)
<p>Afghanistan Algeria Azerbaijan Bangladesh Chad Comoros Egypt Guinea Indonesia Iran Iraq Jordan Kyrgyz Republic-Kyrgyzstan Lebanon Mali Mauritania Niger Nigeria Pakistan Saudi Arabia Senegal Sierra Leone Somalia Sudan Tajikistan Turkey Uganda Uzbekistan Yemen</p>	<p>Afghanistan Algeria Chad Indonesia Iran Iraq Lebanon Mali Nigeria Pakistan Saudi Arabia Senegal Somalia Sudan Turkey Uganda Yemen</p>

Appendix 2

Data Sources – Global Conflict Analysis

Conflict occurrence is taken as reported in the Heidelberg Institute for International Conflict Research's annual publication *Conflict Barometer*, from 2002 to 2009. The reports for years prior to 2002 are not available in English and for 2000-2001 the data is verified from the Uppsala Conflict Data Program. Retrieved from www.ucdp.uu.se/database, Uppsala University©2008

1 – Political Rights Score, from the Freedom House organization, available for different years is averaged for the period from 2001 to 2009. Retrieved from www.freedomhouse.org

2 – Political Terror Scale is taken from two sources: Amnesty International's ratings and U.S. State Department's country reports on human rights practices. Data is available for different years but the average from the two institutions is taken for the year 2000. Gibney, M., Cornett, L., & Wood, R., (2008) *Political Terror Scale 1976-2008*. Retrieved from <http://www.politicalterrorsscale.org/>

3 – HDI The Human Development Index is taken for the year 2000. In a few countries not reported in 2000, the index value for 2002 is used. Values obtained from United Nations Human Development Reports, published annually.

4 – Per capita GDP (PPP). The sources are human development reports for different years and World Development Indicators from the World Bank.

5 – Adult 15+ Unemployment Rate /Youth (15-24) Unemployment rate total: source is Key Indicators for the Labour Market (KILM), International Labour Organization and United Nations Statistics Division.

6 – Education – Literacy 15 +/School Life Expectancy, UNESCO Institute for Statistics. Retrieved from http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=143&IF_Language=eng and United Nations Statistics Division

7 – Under 5 mortality rate A proxy for health facilities and also for nutritional standards for the newborn. Source: UNICEF – Childinfo.org and United Nations Statistics Division.

8 – Corruption Perception Index This widely accepted index from Transparency International is extremely relevant. The Index is available from 1998 – 2009. The average from 2000-2009 is used. Retrieved from http://www.transparency.org/policy_research/surveys_indices/cpi