Defining, Measuring and Addressing Vulnerability: The Case of Post-Conflict Environments

DISSERTATION

to obtain the degree of Doctor at the Maastricht University on the authority of the Rector Magnificus, Prof. Dr. G. P. M. F Mols, in accordance with the decision of the Board of Deans, to be defended in public on Wednesday 24 November 2010, at 14:00

by:

Maha Ahmed

Supervisor:	Prof. Dr. Chris de Neubourg
Co-Supervisor:	Dr. Franziska Gassmann
Assessment Committee:	Prof. Dr. Adam Szirmai (Chair)
	Dr. Stephen Devereux, IDS, University of Sussex
	Dr. Saeed Parto
	Prof. Dr. Louk de la Rive Box
	Prof. Dr. Luc Soete

Table of Contents

List of Figures

List of Tables

List of Acronyms

ADRC	Asian Disaster Reduction Centre
AIA	Afghan Interim Administration
ANDS	Afghan National Development Strategy
AREU	Afghanistan Research and Evaluation Unit
CAF	Conflict Analysis Framework
CDC	Community Development Council
CPRC	Chronic Poverty Research Centre
CSO	Central Statistics Office
DDI	Disaster Deficit Index
DRI	Disaster Risk Index
ECEPWP	Emergency Community Empowerment and Public Works Programme
EFNA	Emergency Food Needs Assessment
GDP	Gross Domestic Product
GNP	Gross National Product
HDR	Human Development Report
IDP	Internally Displaced Person
ILO	International Labour Organisation
IMF	International Monetary Fund
IO	International Organisation
IOM	International Organisation for Migration
ISAF	International Security Assistance Force
JPMU	Joint Programme Management Unit
LDI	Local Disaster Index
LSP	Livelihoods and Social Protection
MPW	Ministry of Public Works
MRRD	Ministry of Rural Rehabilitation and Development
NDF	National Development Framework
NEEP	National Emergency Employment Programme
NGO	Non-Government Organisation
NN	Nearest Neighbour
NRAP	National Rural Access Programme
NRVA	National Risk and Vulnerability Assessment
NSP	National Solidarity Programme
PAR	Pressure And Release
PCE	Post-conflict Environment
PPE	Participatory Planning Exercise

PSM	Propensity Score Matching
PVI	Prevalent Vulnerability Index
RMI	Risk Management Index
SFA	Strategic Framework for Afghanistan
SMT	Senior Management Team
TISA	Transitional Islamic State of Afghanistan
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commission for Refugees
UNOPS	United Nations Office for Project Services
VAM	Vulnerability Assessment Mapping
WDR	World Development Report
WFP	World Food Programme

Acknowledgements

I'd like to begin by thanking Chris de Neubourg. His guidance was instrumental in giving shape to the thesis and my thoughts. Eddy Szirmai was very kind and patient in his advice and very helpful with his comments. I would also like to thank my members of my assessment committee: Eddy Szirmai, Stephen Devereux, Saeed Parto, Louk de la Rive Box and Luc Soete. Your comments were extremely helpful in improving my thesis as well as my own understanding of the topic. I would also like to thank Thierry Magnac whose advice was instrumental in the implementation of what was originally only a rough idea of a project. I thank Dennis de Crombrugghe, who helped me significantly in ironing out those creases, which were certainly beyond my control and understanding.

I'd like to thank Franziska Gassmann. Many people bet on the 'failure' of this relationship but well hey...they didn't know Franziska very well. Not that I've had many PhD supervisors before to compare with but I can safely say that she's the best because she's got the combination right: 10 percent guidance and 90 percent tolerance. On the guidance, well that's obvious. On the tolerance, Franziska tolerated and tolerated and tolerated. Franziska you protected me like a sister and for that I'm very grateful. I'd also like to thank Mindel who also guided me and created the 'enabling environment' for me to undertake my work.

From Maastricht, the governance family, my classmates Victor, Patrick, Henry, Jinjing, Manuel, Matthieu, Lala, Nicola, Treena, Metka, Judit, Marina and Robert, I've had much fun with you all and learned a lot from all of you. Bianca, Denisa, Cheng, Dorcas, Kwan, Lina Salan, Lina Sonne, Asel, Melissa, Flo, thanks for some great evenings, parties and plain old good fun. Sachin, thanks for the many breaks, tea and nice music. Biniam, there were certain things in my life that I had relegated to the sub-conscious. My association with you made me consciously aware of these things and I thank you for that. Eze, thank you for being there when I needed support the most: the food, partying and general fun. Mick, thanks for hanging out, being a great friend and making me happy. Ilire, Luciana, Irina...you all made the School interesting in my last year there.

Henry and Semih, for your help and support on the PhD, I owe you my left and right feet. I hope someday I'm in a position to return the favour. For

your friendship, I have only lifelong gratitude. Abraham, you have this gift of foresight (you're always right) and since I've known you, you've been there for me. So thanks. Marina, thank you for letting me rant and for calming me down. Judit, thank you for being a great shoulder and a good friend. Together you girls made it the most fun office in school and a fun life out of school. Keetie you helped me with work that is obvious but you and and Bartalicious shared a friendship with me which is invaluable. Renee, for the laughter, the evenings of fun and the yoga, I thank you. Metka, thank you for your discussions and debates. We are so different yet so alike and that is what makes you such a good friend. Thank you also for encouraging me to play squash, go running (well you run while I crawl), bike rides etc. I discovered quite a bit with you. Robert, you're one of the nicest human beings I've ever met and you give of yourself to make the other person feel better. Sonila, thank you for sorting out my life every morning and every evening, everyday. Florian thanks for being such a tolerant office mate. Sepideh, it's so good to be with you, to laugh talk and just chill out. Thanks. Victor thanks for sharing conflict with me. And for sharing the defence with me.

To the people at the school: Susan, Celine, Charlotte, Janneke, Anne Marie and Mieke. Thank you for your help over the years and with so many things. It was good to know that I can just barge in and you would help me out.

Durrani Sb. Thank you for getting me involved in NEEP. And thank you for everything else i.e. everytime you've been there to look after me in so many ways. Ayaz Parvez, thank you for teaching me many things in those initial days. Manoj Bhai, Satendra, Amjad Bhai, Pooja, Amit Bhai, Vardah Malik, Monis, Abhikshek, Lubna, Qamurul, Lara, Veronica: for some of the "best days of my life". And for looking out for me. Hasan, you don't usually put a point forth but when you do, it's a good one so thanks for that. Timur, Georg, Daniel and Sonja, thanks for the KO4 experience. Melany, you were there when I needed you the most. Thanks for that. My dearest Lara, Nerma and Asif, thank you for being in my life.

I'd like to thank the J. R. R. Tolkien for writing Lord of the Ring and Peter Jackson, his cast and crew for adapting it into a great movie. I'd also like to thank the makers of M*A*S*H and Alan Alda for Hawkeye. These have

been my constant companions during the process of writing the dissertation and they have been a great escape into a world that should be.

From family, to my uncle Naeem, who encouraged me to do the PhD, when everyone else was suggesting other things. To my cousins Sherry and Jingo who encouraged me to attain higher and higher things in life. To Mehro...you are dear to me like a sister. To my sister Sana, thanks for not letting me quit. My sister Saba aka Chamsu, babe I love for your maturity, for your level-headedness (at least most of the times) and for being there. Thank you for sharing the RK No. 1 spot with me...the fact that we both share it heightens its status. My brother aka Bhai, thanks for always being right and for guiding me on the right way and for always being there irrespective of the situation and for being ever so supportive in every endeavour that I undertake. Maryam, you've brought so much love into our family...I thought we were saturated already but you gave us even more. Zari...you are my sunshine, my only sunshine, you make me happy when skies are grey...how can I tell you how much I love you...there are no words.

Finally, to the two most important people in my life: Javeria and Manzoor Ahmed Ahsan. My parents. Any adjective I use to describe your contribution in my life would be insufficient. Words would just denigrate the love, support and guidance you've given me. Therefore, I'll simply say thank you for yesterday, today and tomorrow. I love you both very much and it is my good fortune to be your daughter. I dedicate this thesis to you.

Glossary

Loya Jirga Grand Council of tribal elders, held in Afghanistan for dispute settlement and identification of development priorities.

Kuchi Nomadic Populations

Shura Body of tribal elders at the village level. In charge of all decision-making, conflict resolution, fund allocation etc. at the local-level.

Jerib Land measurement in Afghanistan. One jerib is one-fifth of a hectare.

Summary

The main question addressed by this thesis is "under what conditions are policy interventions effective in reducing post-conflict vulnerability in the immediate aftermath of conflict, specifically by increasing resilience of and reducing uncertainty for households?" In answering this question, the study addresses three main objectives. First, it develops a workable definition of vulnerability relevant to post-conflict environments. Second it seeks to develop a methodology to measure vulnerability, which is subsequently applied to the case of Afghanistan using data from the National Risk and Vulnerability Assessment (NRVA) exercise conducted in 2005. Third, it examines the effectiveness of workfare programmes in reducing vulnerability by studying the case of the National Emergency Employment Programme (NEEP), a national workfare programme initiated by the Government of Afghanistan in 2002[1].

In terms of defining vulnerability, the study concludes that in post-conflict environments, vulnerability is the result of multidimensional losses. These are related to the lack of resources a household or individual owns at a point in time (resilience) as well as the inability to convert these resources into an achieved state of development (uncertainty from exposure to risk), also known as functionings. In order to measure vulnerability, this study proposes a six-step methodology elaborated below. The indicators used to measure vulnerability should reflect lack of entitlements as well as those constraints that inhibit households from converting their entitlements into achievements. Measuring vulnerability in this way is particularly relevant because in post-conflict environments, panel data or multiple waves of cross-sectional data are unavailable. In trying to assess the effectiveness of workfare programmes in reducing post-conflict vulnerability, this study finds that they have the potential to *contribute* towards vulnerability reduction. Income transfer, an inherent part of workfare programmes, helps

[1] Afghanistan is used as an example of a post-conflict environment in this thesis because till December 2005 (before the American security forces handed over security to NATO), Afghanistan had all the characteristics of post-conflict environments including peace agreements that foresaw the cessation of hostilities and violence; disarmament, demobilisation and reintegration of ex-combatants; refugee repatriation; the creation of the Afghan Interim Administration (AIA) and subsequently the Government of Islamic Republic of Afghanistan; and the initiation of development and reconstruction activities that would ensure economic recovery.

increase resilience especially when income gains are used to enhance entitlements (productive, trade-based and labour-based). By rehabilitating/reconstructing infrastructure, workfare programmes provide access to markets and social services. The implementation process itself contributes towards institutional strengthening and capacity building.

Using the example of NEEP in Afghanistan, this study argues that in practice, the effectiveness of workfare programmes is dependent upon three factors. First is clarity of objectives. In the immediate aftermath of the conflict, NEEP was useful to garner political legitimacy through its role as a safety net. However, such interventions should be quickly followed by other instruments of social protection so that development is comprehensive and the delivery mechanism is not over-loaded by other objectives. Second, design of such programmes should remain context-specific. Aspects such as wage rates, targeting methods and construction techniques should be relevant for the specific environment in which these programmes are implemented. Also, the success of workfare programmes is determined, to a large extent, by the nature and scope of complimentary activities such as improvement of health and education facilities, business development, development of marketing mechanisms, provision of rural transport services etc. Third, implementation mechanisms should remain flexible. Post-conflict needs evolve from emergency to long-term sustainable development. This evolution should be reflected in Programme objectives and design features. Implementation mechanisms should be able to incorporate these changes efficiently so that target populations derive maximum benefits from the Programme.

2. Main Findings

1. Definition of Vulnerability

In defining vulnerability, the thesis begins by outlining the relation between risks and shocks, arguing that it is not the existence of risks per se that directly causes a fall in well-being, rather it is the manifestation of risks into negative shocks that adversely affects household and individual well-being. Using conflict as a specific example of a shock, the study argues that the occurrence of a conflict not only depletes resources to which households and individuals have access, but also causes a breakdown in the process by which households and individuals convert their resources into

achievements. Therefore, vulnerability is viewed as a dynamic phenomenon that influences household well-being *over time* and is the result of two distinct components: exposure to risks, which exist in a fragile external environment surrounding households, as well as the resilience to fortify themselves when these risks manifest into shocks. In Sen's (1981, 1984, 1999) terminology, the exposure to risk is captured by a fall in capabilities; and, the low resilience is captured by lack of entitlements.

In defining vulnerability, this study makes two broad conclusions: First it outlines the fact that vulnerability is dynamic in that it not only emphasises household and individual well-being at the present but also how it changes over time. Making this distinction is important because uncertainty about the future affects household and individual well-being directly. From a policy perspective, it is important to make this distinction since policies that respond to both these components will have a greater and more sustainable impact in the long run. Second, because vulnerability is the combination of two components, it is multidimensional and cannot be measured using conventional uni-dimensional indicators such as income or consumption.

2. Measurement of Vulnerability

Existing measures of vulnerability have a number of limitations. They rely on the availability of panel data, which is highly unlikely to be available in the immediate aftermath of post-conflict environments. Vulnerability assessments used by practitioners are mostly ex-ante, focusing on disaster risk reduction, de-emphasising vulnerability that results due to the occurrence of a shock. Vulnerability measurements tend to use uni-dimensional measures such as income and/or consumption, which are limited in their ability to capture deprivation. Even-though some authors have tried to compile broader lists of indicators to capture multidimensional losses, the consensus on what should be added in such lists, remains low.

In an attempt to address these limitations, this study proposes a six-step methodology to measure vulnerability. Step one envisages the identification of domains of losses, which are defined to be the same as functionings losses. Step two divides each domain into the components of vulnerability: exposure to risk and lack of entitlements. Step three identifies, for each domain, indicators that measure components. This study compiles a list of sixteen indicators that can be used to measure lack of entitlements and

twelve that can be used to measure exposure to risk. Step four identifies thresholds for each indicator; a household is considered deprived in an indicator if its level of endowment falls below this threshold. Thresholds used in this research are objective (reflecting absolute deprivation) and subjective (reflecting relative deprivation specifically for Afghanistan). Step five identifies cut-offs, which determine multidimensional vulnerability. Cut-offs imply aggregation within domains (intra-domain vulnerability) as well as across domains (overall or inter-domain vulnerability). The final step envisages identification of levels of vulnerability. When measuring intra-domain vulnerability, a household is defined as being not vulnerable if it experiences no deprivation or deprivation across one indicator *within* a domain. A household is less vulnerable if it experiences deprivation across two indicators, vulnerable if it experiences deprivation across three and very vulnerable if it experiences deprivation across four or more indicators. When measuring inter-domain vulnerability, each intra-domain outcome (not vulnerable, less vulnerable, vulnerable and very vulnerable) is assigned a rank that ranges from 0-3. The maximum rank a household can attain is 10[2]. A household is not vulnerable if the rank is 0, less vulnerable if the rank falls between 1 and 3, vulnerable if the rank falls between 4 and 7 and very vulnerable if the rank ranges between 8 and 10.

By applying this methodology to Afghanistan, it is possible to conclude that rural and kuchi populations are most deprived in Afghanistan. For indicators such as sanitation, access to safe drinking water and sources of cooking and heating fuel in the domain of human security, deprivation in Afghanistan is pervasive. A significant portion of the population also experiences deprivation across the indicators of income stability and availability. The occurrence of the war has significantly depleted production, trade-based and labour-based entitlements in Afghanistan and has also caused a breakdown of the organisations and markets that would help households utilise the available meagre entitlements. Protracted war has forced households to develop strong mechanisms of informal risk management even-though community membership is low and sources of information remain informal. Availability of access to markets and social

[2] This is because the domain for access has only two indicators and can receive a rank of 0 or 1. Aggregating across all four domains therefore, a household can attain a maximum rank of 3 in each of the domains of human security, exchange freedom and social capital and 1 for the domain of access making the maximum 10.

services is limited, which diminishes their utilisation for productive purposes.

At the intra-domain level, households experience two dimensional deprivation in the three domains of human security, social capital and access. Deprivation in the domain of exchange freedom is severe and households experience three and four dimensional vulnerability. At the inter-domain level, multidimensional deprivation in the domains of human security and exchange freedom exacerbates vulnerability while losses across the domains of social capital and access contribute less and may even redress vulnerability. With the component-wise analysis, it is possible to conclude that the largest proportion of households experience deprivation across both components, implying that not only do Afghan households have low endowments, they are unable to convert these into well-being.

3. Effectiveness of Workfare Programmes in Redressing Post-conflict Vulnerability

As a type of cash transfer, workfare programmes are effective in reducing post-conflict vulnerability by ensuring income gains (primary, short run impact) and rehabilitation/reconstruction of much needed infrastructure and improving access to and strengthening governance institutions (secondary, medium to long term impact). Focus group data collected from Afghanistan in 2005 reveals that generally NEEP has had a positive effect on beneficiary populations despite regional variations. Infrastructure creation has facilitated inter-provincial trade by providing connectivity to lucrative and bigger markets. Road construction helps improve asset value of land located along the road. Improved roads facilitate access to vocational education and grazing lands. Income transfer helped drought victims and returning refugees to stabilise incomes in the West. In the Southeast, the Programme provided employment for youth who were facing psychological problems and in the North, the Programme helped transfer incomes to women, especially widows.

NEEP has had a discernable impact at three levels (governments, communities and individuals/households or micro-levels) over two stages. The implementation of NEEP has helped the government of Afghanistan to garner political legitimacy and build capacity. Since the Programme is implemented through community organisations, NEEP has promoted

community development and enhancement of social capital. At the micro-level, NEEP has helped augment household/individual incomes through cash transfers. The secondary impact for the Government is that they help achieve poverty reduction; at the community level, such programmes help strengthen trust relations by fostering accountability and ownership in the development process; and, at the micro-level, these programmes improve household/individual capabilities to utilise entitlements.

4. *Extent of Income Transfers Through Workfare Programmes*

Income transfer through NEEP is measured by identifying the *real* income earned by participating households. The real income is defined as the nominal income transferred through the Programme less the opportunity cost of participation. To do this, the thesis uses propensity score matching to compare participating and non-participating households. Using three different types of matching techniques and after bootstrapping the results, the chapter finds that the real income transfer through NEEP is negative. However, it is statistically insignificant. Therefore, statistically it is not possible to conclude that participants are different from non-participants. There are three main reasons for these results. First, as a flagship programme initiated by the transitional government of Afghanistan, income transfer was one of *many* objectives of NEEP. In the initial years of implementation, NEEP was seen i) as a vehicle to garner political legitimacy for a new government; and, ii) to build implementation capacity of the Government at the central and provincial levels. Second, NEEP activities were implemented in the summer months when other construction and agricultural activities are undertaken. Especially in 2004 and 2005, agricultural production was high due to the end of the drought. The existence of these employment opportunities increased the opportunity cost of participating in NEEP, which led to lower income gains. Finally, the main category of workers employed on NEEP consisted of able-bodied unskilled men, who are free to participate in the labour market. It is relatively easier for this group to find employment elsewhere. This increases opportunity cost of participating in NEEP. The vulnerable groups that *should* have participated in NEEP, such as the disabled and women particularly from female headed households, are structurally excluded from participating in NEEP because of cultural constraints or the nature of work.

5. Patterns of Infrastructure Utilisation

To identify the impact of infrastructure rehabilitation through NEEP, the thesis relies on survey data collected from five provinces across Afghanistan. It is possible to conclude that while rural infrastructure is necessary to improve access, it is not sufficient to ensure optimal utilisation of markets and services. Proximity to main roads makes it easier for household members to be mobile and to use motorised vehicles that not only help save time but also make travel relatively easier. In many areas of rural Afghanistan, households do not generate marketable surplus. Nevertheless, where households are able to produce larger quantities of agricultural output and they are located near a main road, it is easy to access a market and sell produce. If the household is located at a distance from the main road, extra produce is either sold in local markets at low prices, or it is not sold at all because local markets are saturated. Productivity levels in Afghanistan are low and households visit markets more for social than trade purposes. With regards to services, better roads do improve speed of access particularly for health services and outcomes of tertiary and vocational education. However, the quantity and quality of these services remains low. Especially for educational attainment, lack of access is one of many reasons why enrolment rates in academic institutions in Afghanistan are low. Cultural constraints inhibit female education and the bleak prospects of employment upon completion work to discourage rural Afghans from attaining education.

To improve utilisation of roads, it is necessary to improve transport services such as the availability of motorised vehicles. Also, there is a need for a comprehensive rural transport strategy, which outlines i) a coherent framework that would guide the choice of roads to be constructed or rehabilitated; ii) a comprehensive maintenance plan that will ensure sustainability of assets created; and, iii) identify other complimentary types of rural communications infrastructure that would benefit rural households such as footpaths and footbridges.

3. Further Steps

The central questions addressed in this research are important for three main reasons. First, the study contributes towards the literature on conceptualising and measuring vulnerability. Second, it studies reconstruction activities in the immediate aftermath of conflict, when post-

conflict environments are characterised by emergency needs. Third, the thesis provides a framework to analyse post-conflict vulnerability using Sen's ideas of entitlements, capabilities and functionings, thereby highlighting the root causes of vulnerability that are manifested when a conflict occurs.

There are a number of topics that have not explicitly been addressed in this analysis and need to be explored further. First, an in-depth analysis of the methodology should be carried out to address the issue of imbalanced domains, which tends to drive results. The proposed methodology should be applied to non-post-conflict environments so that its relevance can be assessed. Third, it is important to examine the impact of conditionality when designing cash transfer programmes. The conditionality should be imposed only when benefit derived from it outweighs the costs of delivering it. Fourth, data, specific to NEEP should be collected so that participants can be effectively compared to non-participants to precisely calculate income gains. Specifically in Afghanistan, the research proposes: i) detailed analysis on the scope of enterprise development; ii) the scope and dimensions of existing trade activities should be identified in order to develop additional avenues of trade; iii) the scope for inter-ministerial coordination should be studied, with emphasis on the possibilities of linkages across various ministries of the Government of Afghanistan; and iv) similar research should be undertaken using more current data for Afghanistan, by way of assessing how the findings change.

Chapter 1 Introduction

Vulnerability relates to the ability of individuals and households to maintain minimum standards of well-being over time. It reflects those risks, which are increased tremendously when households and individuals experience losses. Risks and losses are a major cause of deprivation i.e. the inability to meet minimum standards of well-being. This exacerbates vulnerability. The occurrence of a conflict has a number of consequences. Prolonged conflict has a negative impact on the economy, particularly macro-economic indicators. Other illicit activities of a significant nature such as narcotics trade, smuggling (human and goods) and corruption have a destructive impact on reconstruction activities. Conflict also results in a crisis of political legitimacy, where the state structures are left devastated with weak judicial, financial, fiscal, administrative and regulatory capacities. Post-conflict environments are characterised by an influx of returning refugees, who may become a strain on government resources. The aftermath of conflict is characterised by adverse security conditions and a breakdown of civil society organisations, which hampers social capital and accountability. The reliance on formal governance is reduced and kinship associations and informal aid particularly in rural areas remain critical forms of social organisation. The occurrence of a conflict also causes widespread destruction of physical infrastructure.

The central idea proposed by this study is that at the household level, post-conflict losses are manifested in two ways. First, the occurrence of a conflict causes depletion of resources, which increases poverty and reduces resilience against unforeseen shocks that may occur in the future. Second, the occurrence of a conflict creates uncertainty, which makes it difficult for households and individuals to convert their meagre stock of resources into achievements. Together, these two aspects of post-conflict environments cause vulnerability. Breaking down vulnerability into its components is essential for policy makers to understand how the impact of the conflict is experienced at the micro-level. Analysing the root causes of vulnerability helps identify which aspects of the post-conflict environment cause maximum deprivation and where reconstruction efforts should be focused.
Post-conflict Afghanistan faces the challenges highlighted above. Afghanistan consists of multiple ethnicities, each of which has had to be effectively incorporated in the rebuilding process. Afghanistan has faced prolonged war that has left the country devastated; resources have been

severely depleted and institutions of governance left crippled. With the official culmination of the conflict in end-2001, Afghanistan faced a number of problems, including wide-spread poverty, defunct economy, an ethnically fragmented government, returning refugees and a severe shortage of administrative and logistical capacity to undertake the complex tasks related to post-conflict reconstruction. The country was in a state of emergency and there was a real threat of a resurgence of conflict. Given the urgency to initiate reconstruction and development activities, it is difficult to identify types of interventions most suited to the specific context of Afghanistan. Even when policies are adopted, their design and implementation mechanisms may not be sufficiently modified to suit the needs and requirements of the intended beneficiaries. The problems associated with design and implementation, are exacerbated by the absence of quality data to effectively guide policy interventions. In the immediate aftermath of conflict, reconstruction efforts are driven by priorities of the national government and donor agencies rather than addressing the needs of the vulnerable populations.

In this context, policy interventions that seek to promote post-conflict reconstruction should emphasise reduction of vulnerability so that households are not only able to maintain a standard of well-being but are also able to sustain it over the future. In order to formulate such policies, it is necessary to first develop a concise definition of post-conflict vulnerability. It is also important to measure it to assess the extent of the problem. The study examines the case of the National Emergency Employment Programme (NEEP), a national workfare programme implemented by the Government of Afghanistan to assess how such interventions help reduce vulnerability. The main research question therefore is:

"Under what conditions are policy interventions effective in reducing post-conflict vulnerability in the immediate aftermath of conflict, specifically by increasing resilience of and reducing uncertainty for households?"

In this introductory chapter, the subsequent section elaborates on the specific sub-questions and hypotheses raised by this study. Section 2 provides a rationale for why Afghanistan has been chosen as a case-study for the analysis. Section 3 briefly outlines the academic contribution and

relevance of this study while Section 4 provides a detailed structure of the ensuing chapters.

1. Sub-Questions and Hypotheses

The objective of this study is to analyse the impact of workfare programmes as an instrument of social policy in reducing vulnerability in post-shock environments, specifically post-conflict situations. The emphasis is on analysing the dynamics of vulnerability in the immediate aftermath of conflict. In addressing this objective, the study addresses three key objectives:

1. Definition of vulnerability.
2. Measurement of vulnerability.
3. Effectiveness of workfare programmes, as an instrument of social policy, to redress post-conflict vulnerability.

Workfare programmes have two components, which make them a popular policy choice. They have a safety net function, through which governments are able to make cash transfers, augmenting household or individual incomes. They also promote sustainable development through the rehabilitation/construction of infrastructure. In order to assess the effectiveness of workfare programmes in reducing vulnerability, it is important to examine the extent to which such programmes help augment incomes and how infrastructure created through the programme is utilised.

Definition of Vulnerability

In answering this question, the research draws a distinction between poverty and vulnerability. While the former is a static concept measured at a *point in time*, the latter is a dynamic phenomenon that influences household well-being *over time*. The dynamic nature of vulnerability is the result of two distinct components: exposure to risks, which exist in a fragile external environment surrounding households as well as the resilience to fortify themselves when these risks manifest into shocks. In an attempt to combine these components of vulnerability, the study uses the ideas of entitlements, capabilities and functionings proposed by Sen (1981, 1984, 1999). The occurrence of a shock, specifically a conflict depletes resources thereby having a direct impact on the level of household resilience. In

addition, it creates new risks that make the socio-economic and political environment surrounding the household more uncertain. This study argues that reduced resilience manifests itself as internal defencelessness caused by a lack of entitlements, while the creation of new risks increase external defencelessness and consequently the exposure to risk.

In defining vulnerability, this study posits three hypotheses: first, vulnerability in post-conflict environments is multidimensional. Second, vulnerability in post-conflict environments is caused because there is fall in resource endowments to which households have access i.e. a fall in the level of entitlements. Third, vulnerability in post-conflict environments is exacerbated by a breakdown in the process by which households convert entitlements into functionings, i.e. exposure to risk.

Measurement of Vulnerability

Due to its amorphous definition, especially in post-conflict environments, there are no generally accepted measures of vulnerability. A number of attempts have been made to address this concern, perhaps the most compelling being the idea proposed by Bane and Ellwood (1986). They measure poverty spells over time to identify how vulnerable households are. For such an approach to be effective in its analysis, it is imperative to use panel data, which is highly unlikely to be available in the immediate aftermath of post-conflict environments. In addition, vulnerability assessments used by practitioners are mostly ex-ante focusing on disaster risk reduction, de-emphasising ex-post vulnerability reduction, which by definition, is the requirement of post-conflict environments. Further, vulnerability measurements tend to use uni-dimensional measures such as income and/or consumption, which do not adequately capture the gamut of deprivation that exists in post-conflict environments. Even-though, some authors (Alkire, 2002) have tried to compile broader lists of indicators to capture multidimensional losses, the consensus on what should be added in such lists remains low.

Any attempt at measuring vulnerability should remain cognisant of three factors. First, vulnerability in post-conflict environments is the result of multidimensional losses. Second, vulnerability should be viewed as a *process* rather than a phenomenon. Viewing vulnerability as a process emphasises its dynamic nature, thus distinguishing it from poverty. Finally,

attempts at measurement should remain context-specific so that measurement remains relevant. This research develops a six-step methodology to operationalise and measure the idea of vulnerability developed in Chapter 2. The methodology begins by identifying the categories of losses experienced in post-conflict environments, it compiles a comprehensive list of indicators used to measure the multidimensional aspect of vulnerability, it specifies components of vulnerability that capture both aspects of vulnerability: loss of resilience and heightened exposure to risk and it provides a framework for combining the various categories of losses, indicators and components to develop an index of overall vulnerability. The methodology also allows for a component-wise analysis to determine which component exacerbates vulnerability: exposure to risk, lack of entitlements or both.

This methodology is applied to measure post-conflict vulnerability in the case of Afghanistan, using data from the National Risk and Vulnerability Assessment (NRVA) 2005 exercise.

Effectiveness of Workfare Programmes in Redressing Post-conflict Vulnerability

Vulnerability in post-conflict environments is caused by multiple losses, which can be split in four categories: human security, exchange possibilities, social capital and access. These losses result in vulnerability in that they create an uncertain environment of defencelessness and reduce household capabilities to fortify themselves against a fall in well-being. Deprived households can adopt a variety of mechanisms to cope with vulnerability (Holzmann and Jorgensen 1999). They can rely on informal risk sharing arrangements, where community members support each other. These are useful since risk is pooled amongst individuals who know and trust each other, monitoring is easier and there is a commitment towards making them work. However, when a community is hit by a covariate shock such as a conflict, risk pooling breaks down and such informal mechanisms may not be most effective. Formal market-based risk management strategies rely on social insurance and credit to manage the impact of shock. Formal market-based measures may also not be effective since most post-conflict environments, as also in developing countries in general, markets are either not available or not sufficiently developed to address the needs of the poor. Where they exist, the vulnerable may not be included in the market because of information asymmetries or because of the uncertainty characteristic of

such environments. Formal publicly-mandated risk management policies imply the involvement of the government in the implementation of risk coping strategies. Given the limited effectiveness of other arrangements in post-conflict environments, government intervention in the delivery of safety nets is considered as the only recourse available to vulnerable households to cope with risks.

Typical government policies common in post-conflict environments can include the subsidisation of selected items, food aid and cash transfers. This study examines the effectiveness of workfare programmes as a type of cash transfer programme in reducing post-conflict vulnerability by ensuring income gains, rehabilitation/reconstruction of much needed infrastructure and improving access to and strengthening governance institutions. It argues that, in reducing vulnerability, workfare programmes have a primary (short run) and secondary (medium to long run) level of impact: in the short run, income transfers help temporarily stabilise fragile incomes as well as increase household entitlements. In the medium to long run, infrastructure that is created through the programmes helps in reducing poverty as well as strengthening institutional structures. Moreover, greater access to markets and social services increases entitlements and social capital. Using data collected through focus group interviews conducted in 2005, the research highlights aspects of design and implementation that are relevant for the reduction of post-conflict vulnerability in Afghanistan.

Extent of Income Transfers Through Workfare Programmes

Workfare programmes can be considered an effective vehicle to transfer cash to vulnerable communities in post-conflict environments. Evidence from South Asia, Latin America and Africa suggests these programmes ensure income gains that are decidedly pro-poor, a success that can be attributed to the self-targeting mechanism that is a feature of most such programmes. The question this study seeks to address is whether it is possible for such programmes to ensure real income gains for vulnerable populations in the immediate aftermath of conflict.

Two questions arise when trying to identify real income gains through workfare programmes. First, while income earned as a result of participation is relatively easily identifiable, it is comparatively more difficult to determine counterfactual income i.e. the income that households

could have earned had they not participated in the programme or the earnings foregone as a result of participation. This raises the second question: what are foregone earnings? Ascertaining foregone earnings is difficult because it is impossible to observe incomes with and without participation for the same household (Jalan and Ravallion 1999). While designing and implementing workfare programmes, it is usually assumed that participants are drawn from a set of unemployed people. However, even if participants are not formally employed, they do have an opportunity cost of participation, which influences the extent of real income gains that can be had through participation.

This study uses propensity score matching to compare participants and non-participants with respect to income and determine the extent of real income gains through the Programme. The research uses the NRVA (2005) data for this purpose.

Patterns of Infrastructure Utilisation

A key advantage of workfare programmes in post-conflict environments is the creation/rehabilitation of infrastructure, which is destroyed due to conflict. Such programmes have been used for quick rehabilitation/reconstruction of useful physical communications and land development infrastructure in post-shock and post-conflict environments. A major component of NEEP/NRAP has been provision of rural roads to kick-start local economies and promotion of access to health and education services. There is a significant amount of literature that examines the link between improved road connectivity, economic development and outcomes of health and education (Bryceson et al 2003). Rural roads are viewed as the first step towards integrated rural assessment and planning. If delivery of rural infrastructure is decentralised, it helps strengthen community organisations and build robust social capital. This study seeks to understand why and how vulnerable rural communities utilise rural infrastructure in Afghanistan. In doing so, the research specifically seeks to investigate whether better connectivity improves utilisation of health and education services and markets. The research also examines whether the nature of income generating activities, topography and proximity to main roads influences mobility and patterns of utilisation.

The NRVA (2005) dataset does not provide adequate information on assessing the benefits that result from improved connectivity. To circumvent this issue and to effectively assess the impact of rural roads in promoting utilisation of services and markets, this research uses data from a survey, funded by the World Bank and conducted in ten villages in five provinces across Afghanistan.

2. Afghanistan

2.1. Why Afghanistan

This study seeks to analyse the impact of policies in redressing vulnerability that occurs in a post-shock environment. Specifically, the study examines the effectiveness of workfare programmes in post-conflict environments. The aim is to study those factors that influence policy effectiveness in the *immediate aftermath* of the conflict when the post-conflict environment is characterised by emergency needs. Afghanistan provides the ideal opportunity to study post-conflict reconstruction in the immediate aftermath of the conflict. The conflict officially ended in 2001 at which point the interim administration, international organisations and development practitioners alike declared that Afghanistan was in a state of emergency with a crisis of humanitarian needs. The state of emergency was officially declared over, with the presidential elections of 2004.

Even-though reconstruction in Afghanistan is fraught with a number of shortcomings, which will be highlighted in this study, development activities were planned in such a way that they were sustainable over the long term. As a policy intervention, the planning and implementation of National Emergency Employment Programme (NEEP) was relatively better than other policies not just in Afghanistan but also in other post-conflict environments. Therefore, NEEP provides an ideal case-study to analyse post-conflict reconstruction.

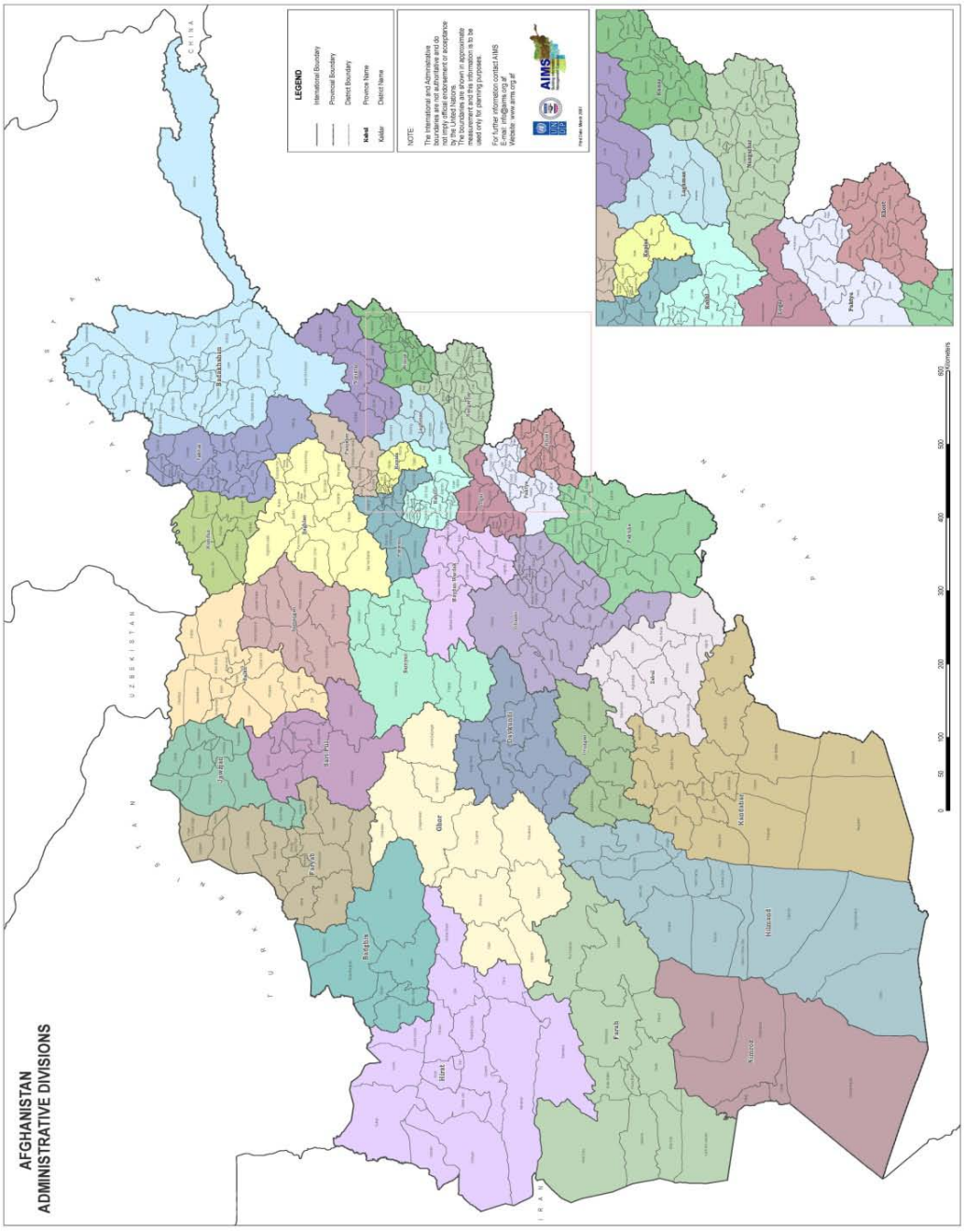
In 2003, the Government of Afghanistan, with support from various international organisations, conducted a National Risk and Vulnerability Assessment (NRVA) exercise, aimed at collecting household data. This NRVA exercise built on the Vulnerability Assessment Mapping (VAM) exercise previously conducted by the World Food Programme (WFP). A second and third wave of NRVA data was collected in 2005 and 2007. The

recent culmination of the conflict along with the availability of data makes Afghanistan the ideal case-study for this research.

2.2. Geographical Location

Afghanistan is a landlocked country located in South Asia with an estimated population of 29.93 million, representing over six major ethnicities. It has two official languages: Dari and Pushto. The terrain of the country is rugged and mountainous, with only 12 percent of land area being arable. The country has 34 provinces. The highest point is the peak of Mt. Nawshak at 7,485 metres and the lowest point is at the Amu River at 258 metres. Figure 1 provides a map of Afghanistan.

Figure 1: Map of Afghanistan (Source: AIMS Website)



2.3. Macro-economic and Demographic Situation

Afghanistan has seen a significant rise in GDP from US$ 4 billion in 2002 to an estimated US$ 8.4 billion in 2006. The growth rate in 2003 was estimated at 16 percent (UNDP 2004, IMF 2007). Poverty in the country is high as one in every two people is considered poor (UNDP 2004). Despite the low amount of arable land, agriculture is the most important source of income generation for Afghans, accounting for almost 33 percent of households. Small businesses and daily wage labour account for the second and third most common sources of income generation, accounting for almost over 17 percent of households apiece (NRVA 2005). Imports doubled from 2002-03 to 2006-07, going from approximately US$ 2 to US$ 4 billion (IMF 2007). Foreign aid is a major component of the annual budget accounting for over two-thirds of the total public budget (IMF 2007).

In terms of demographics, almost 46 percent of the Afghan population comprises women and 54 percent men. Majority of the Afghan population resides in rural areas, accounting for approximately 77 percent of total population. Educational attainment is low with almost 60 percent of the population having no education. Average household size is around 7, with about 44 percent of households having 6-8 members.

2.4. Post-conflict Afghanistan

Even-though Afghanistan has had a long history of conflict, this study focuses on the most recent conflict that officially ended in 2001. The root of this conflict lies in the Soviet invasion of Afghanistan in 1979. The withdrawal of Soviet forces in the late 1980s and the inability of the US and Soviet forces to broker peace and instate an interim government created chaos in Afghanistan. The resultant transition transformed a distinctly Cold War conflict into a post-Cold War conflict. The crisis took on the form of violent and competing ethno-regional systems that gave Afghanistan the appearance of a failed state (Duffield et al, 2002). Afghanistan emerged as a rentier state characterised by a series of transborder political systems that sustained themselves through extra-legal economic activities. These systems enjoyed varying degrees of independence from Western aid and diplomacy.

In this context, the Taleban gained power in September 1994. The Taleban were able to consolidate their position as the leaders of this country through

a mix of force and because they presented themselves as an Islamic solution to existing political fragmentation. The Taleban were successful in forging a transborder and regionalised emerging political complex.

To address the emerging humanitarian crisis in Afghanistan, the UN proposed a Strategic Framework for Afghanistan (SFA) in 1998 to "...promote greater coherence between the assistance and political wings of the UN and its partner organisations in the interests of more effectively promoting peace and stability"[3]. The framework was seen as a "...more coherent effective and integrated political strategy and assistance programme"[4]. By 2000, the Taleban had gained more control and the UN imposed sanctions on Afghanistan, the SFA was in crisis.

At this time, the World Trade Centres in New York were attacked and the Al-Qaida was blamed. This began the US-led war in Afghanistan, the first military strikes launched in October 2001. The war ended in December 2001 and culminated in the Bonn Agreement.

The Bonn Agreement, which was signed in December 2001, was seen as a follow up to the Security Council Resolution 1378, unanimously adopted in November 2001, where the UN pledged its support for the reconstruction of Afghanistan. The Bonn Agreement brought together rival Afghan groups to agree on a power sharing deal in the presence of the Afghan UN Special Representative of the Secretary General. It began by stating that the participants "...determined to end the tragic conflict in Afghanistan and promote national reconciliation, lasting peace, stability and respect for human rights in the country,.."[5]. The Agreement acknowledged the right of Afghans to determine their own political future, while recognising the need to ensure broad representation of all segments of the Afghan population in the interim arrangements of governance. It also mentioned the congregation of the *Emergency Loya Jirga*, a meeting of elders in Afghanistan to approve

[3] Pg. iii, Duffield, M., Gossman, P. & Leader, N. (2002). "Review of the Strategic Framework for Afghanistan". Afghan Research and Evaluation Unit (AREU), Kabul, Afghanistan

[4] Pg. iv, Duffield, M., Gossman, P. & Leader, N. (2002). "Review of the Strategic Framework for Afghanistan". Afghan Research and Evaluation Unit (AREU), Kabul, Afghanistan

[5] Text of the Bonn Agreement.

proposals for the structure and key personnel of the Transitional Administration.

The Bonn Agreement led to the creation of the Afghan Interim Administration (AIA) that was entrusted with the day-to-day conduct of the affairs of state and empowered the AIA with the right to issue decrees for the peace, order and good government of Afghanistan. It also foresaw a key role for the UN as an internationally recognised impartial institution. Among other tasks, the UN was encouraged to take measures to guarantee the national sovereignty, territorial integrity and unity of Afghanistan, to garner international support to assist with the rehabilitation, recovery and reconstruction of Afghanistan, to conduct a census in Afghanistan and to prepare a registration of voters.

Subsequent to the *Emergency Loya Jirga*, the Transitional Islamic State of Afghanistan (TISA) was formed, led by Hamid Karzai. This administration led the reconstruction efforts in Afghanistan till 2004, when, after the presidential elections, Afghanistan was proclaimed as the Islamic Republic of Afghanistan.

As a result of this process, the authority of the Government has been and continues to be recognised, supported and legitimised by the UN. The present conflict in Afghanistan can be categorised as a rebellion by certain factions within the country (Taleban) that do not recognise the authority and legitimacy of the new Government. Such rebellions are a common feature of post-conflict environments: even-though the official war is declared over, certain factions continue to resist. Such resistance, did not, in 2005[6], undermine the sovereignty and legitimacy of an established/democratically elected government in Afghanistan to carry out reconstruction activities. It is for this reason that this study considers Afghanistan a post-conflict environment.

[6] The 2004 presidential elections and the subsequent 2005 Cabinet elections were hailed as a watershed in the history of Afghanistan, being the first relatively free and fair direct elections, the legislative polls of 1965 and 1969 being indirect elections. With the rising violence post 2006 and the questions surrounding subsequent elections, the representative nature of these governments has been challenged.

2.4.1 Is Afghanistan Post-conflict

International organisations and academics define post-conflict not as a point in time when an 'in conflict' environment becomes 'post-conflict' but rather as a continuum over which the 'in conflict' environment evolves (Kievelitz et al 2004). Such an evolution primarily entails the institutionalisation of changes that imply a transition from war to peace. Brown et al (2007) have highlighted a number of changes that characterise this continuum. These include cessation of hostilities and violence; signing of political peace agreements; demobilisation, disarmament and reintegration; refugee repatriation; establishment of a functioning state; achieving reconciliation and societal integration; and, economic recovery.

These seven characteristics were experienced in Afghanistan since 2001 at least till January 2006. The Bonn Agreement, which was signed in December 2001 foresaw the cessation of hostilities and violence as well as the signing of political peace agreements between warring communities within Afghanistan. The demobilisation, disarmament and reintegration process in Afghanistan was initiated in 2002 and gathered significant momentum in 2004 through Japanese funding and is ongoing till today. Refugee repatriation started in 2002. Interestingly, the refugees that returned to Afghanistan were not only from neighbouring countries of Iran, Pakistan, Turkmenistan, Uzbekistan and Tajikistan but also from the US, UK and Europe. These refugees represented the whole gamut of skills, ranging from medium skilled to highly skilled and were the main catalyst for Afghan development. The Bonn Agreement also led to the creation of the Afghan Interim Administration (AIA), consisting of one chairman, five vice-chairmen and 24 other members, was entrusted with the responsibility of promulgating the 1964 constitution as the basic law, the day to day management of the state, the printing and circulation of the Afghan currency, establishment of the civil service, the convening of the *Loya Jirga* and to kick-start development activities through the National Development Framework (NDF). Subsequent to the *Loya Jirga*, the AIA was modified to become the Transitional Islamic State of Afghanistan (TISA) and after the presidential election of 2004 and cabinet election of 2005, TISA became the Government of Islamic Republic of Afghanistan. This Government is democratically elected and fully in charge of policy making in the country. The *Loya Jirga* of 2003 was the first attempt in over thirty years to bring community elders together and discuss Afghan reconstruction. This was

viewed by national and international authorities as a monumental step towards achieving reconciliation and societal reintegration. Economic recovery was envisioned and initiated by the National Development Framework that included, as its first steps, the implementation of community development, infrastructure creation and temporary employment generation across the nation.

The UN Security Council has passed a number of resolutions related to Afghanistan, specifically resolutions number 1377, 1378, 1383 and 1386. These resolutions are critical in highlighting Afghanistan's evolution from being a victim of terrorism to a country with an independent administration, engaged in reconstruction and development. Resolution number 1386 led to the creation of the International Security Assistance Force (ISAF) in 2001, which along with American troops was in charge of the security condition in the country. On January 1, 2006, American troops handed over ISAF leadership to British, Canadian and Dutch troops who were unable to effectively quell the pockets of insurgency that characterised Afghanistan. In the meantime, the Taleban had been able to regroup in the border regions of Afghanistan and Pakistan, which allowed them to regain strength. This is when the country experienced resurgence in the conflict.

This study examines vulnerability in post-conflict environments, *specifically in the aftermath of conflict*. To this end, Afghanistan is used as a case-study because from December 2001 till December 2005, the time period considered by this research, given the political and economic evolution that took place in Afghanistan, it was considered a post-conflict environment.

3. Contribution and Relevance

The academic contribution of this research is threefold. First, it contributes towards the existing literature on conceptualising and measuring vulnerability. Second, it contributes towards the current literature on post-conflict reconstruction. Finally, it combines the two strands to analyse response mechanisms that are aimed at reducing the specific type of vulnerability manifested in the immediate aftermath of conflict. The relevance of this research lies in the fact that it develops an index of vulnerability for Afghanistan, which has not been compiled before. In addition, it assesses policy effectiveness in terms of redressing multidimensional deprivation.

3.1. Conceptualisation and Measurement of Vulnerability

In terms of advancing the literature on vulnerability, this research makes four distinct contributions.

First, the study consolidates current knowledge from different strands in the literature to compile a single, workable definition of vulnerability. Vulnerability has received distinct treatment in the economics, sociology, anthropology and sustainable livelihoods literature (Alwang, Siegel and Jorgenson, 2001). In developing a definition of vulnerability, this study attempts to effectively combine the virtues of these varied approaches into one conceptualisation as the combination of low resilience and uncertainty.

Defining vulnerability as such is not entirely new. However – and this is the second contribution of this research, in thinking about the combination of components, it defines vulnerability as being multidimensional. This study argues that low resilience manifests itself into low levels of resource endowment at the individual or household level. Uncertainty manifests itself into an inability to convert resources into an achievement.

The third contribution of this research to existing literature is that it provides a framework to measure multidimensional vulnerability. In situations where panel data and/or multiple waves of cross-sectional data are missing, the methodology proposed, innovatively combines both aspects of vulnerability: indicators that measure resource endowments as well as indicators that assess the extent to which households can convert their endowments into an achieved state of being. In doing so, the methodology provides a mechanism to compute an index of multidimensional vulnerability.

The fourth contribution of this research emphasises the dynamic nature of vulnerability, viewing it as a process rather than a static outcome, a feature that distinguishes it from the concept of poverty. In studying the impact of a shock on well-being, this study elaborates on the behind-the-scenes-action i.e. the process by which a shock leads to a fall in well-being by analysing the manifestation of risks and how it leads to deprivation at the micro-level.

3.2. Post-conflict Reconstruction

In terms of furthering the understanding of post-conflict environments, this study makes two key contributions.

First, this research explores reconstruction in the environment that exists in the immediate aftermath of the conflict when such environments are still characterised by emergency needs. Post-conflict environments are characterised by emergency needs that require projects of quick impact. As the environment stabilises, these needs evolve. Interventions made to address such needs become more long-term in the type of impact they envisage and are geared towards providing sustainable development. Post-conflict reconstruction entails making this transition from emergency to sustainable development in the most effective manner. This study explores the effectiveness of policies when needs are still of an emergency nature. It identifies aspects of the post-conflict environment that may diminish the impact of policies in this period. In addition, it outlines ways in which policies can be re-designed to make a smooth transition from a phase of emergency into a phase of sustainable development.

Second, the research proposes a framework to analyse post-conflict environments, using Sen's ideas of entitlements, capabilities and functionings. Existing frameworks to analyse post-conflict environments are ad hoc and are organisation-specific. They address the objectives of the organisations that have developed them. Additionaly, such frameworks are limited in the extent to which they analyse the processes by which the occurrence of a shock impacts households and individuals. By using the ideas of entitlements, capabilities and functionings, this research is able to highlight the fact that the occurrence of a conflict depletes resources (entitlement loss), causes a breakdown of the processes by which the resources are converted (capability loss) into an achieved state of being (functionings loss). Dissecting the impact of a shock in this way allows for a better understanding of the environment that results from the shock and also informs policy making.

Existing literature on vulnerability either defines it or measures it in various contexts. The relevance of this study comes from the fact that it not only *defines* vulnerability but also *measures* it by compiling an index of overall vulnerability for the case of Afghanistan using data from one cross-sectional

household survey. Such an in-depth analysis has not been undertaken in the past.

4. Structure of the Study

This study consists of six chapters in addition to the Introduction (Chapter 1) and the Conclusion (Chapter 8). Each chapter seeks to address distinct questions, highlighted above and can be viewed as a self-contained study in itself with its own literature review and discussion. Together, the analysis presented in each chapter addresses the main question raised in the research.

Chapter 2 develops a conceptual framework of vulnerability for post-conflict environments. It begins by reviewing the relation between risks and shock and how the former is manifested into the latter. The chapter undertakes an in-depth analysis of post-conflict environments to identify the broad categories of losses that result from conflict. It briefly summarises Sen's ideas of entitlements, capabilities and functionings. By considering the categories of post-conflict losses as functionings losses (also called domain losses in subsequent chapters), it provides a framework for analysing vulnerability as a combination of two components: low entitlements and an inability to convert entitlements into functionings. The chapter defines vulnerability as the consequence of multidimensional deprivation and compiles a comprehensive list of indicators that can be used to measure it. The chapter also splits these indicators into the components of vulnerability.

Chapter 3 examines existing literature on the measurement of vulnerability with a view to identify shortcomings of current approaches. It proposes a six-step methodology that can be applied to measure vulnerability. This methodology not only aims at addressing the limitations of existing approaches, it also provides a way to operationalise the definition of vulnerability developed in Chapter 2. It refines the list of indicators developed in Chapter 2 by identifying thresholds for each indicator below which a household would be considered deprived. It analyses trends of uni-dimensional deprivation in Afghanistan to understand how the occurrence of conflict influences household access to entitlements and their utilisation. In doing so, the chapter provides the context in which the profile of multidimensional vulnerability in Afghanistan can be studied.

Chapter 4 seeks to develop a profile of multidimensional vulnerability in Afghanistan. It begins by analysing multidimensional vulnerability within the domains to highlight which indicators, when combined with others, cause greater deprivation. The chapter goes on to aggregate indicators across domains to determine inter-domain or overall vulnerability. This is reflected in an overall index of vulnerability that measures four levels of vulnerability: not vulnerable, less vulnerable, vulnerable and very vulnerable. The chapter also breaks down vulnerability into its components. This analysis is useful because it highlights whether it is exposure to risk or lack of entitlements or both that exacerbate household deprivation. In doing this, the chapter proposes two distinct approaches towards measuring multidimensional vulnerability and outlines the methodological differences between the two. Finally, the chapter identifies those demographic characteristics that can contribute towards vulnerability. This analysis is undertaken using the overall index as well as component-wise measurements.

Chapter 5 provides a literature review of response mechanisms used to redress vulnerability. In post-conflict environments, households rely mainly on coping rather than prevention and mitigation strategies. The chapter investigates the effectiveness of informal, market-based and formally-mandated measures to conclude that government intervention is usually the only recourse available to households to manage the impact of conflict. The chapter analyses various types of safety nets including workfare programmes and draws attention to global experiences in designing and implementing such programmes. It also explores aspects of efficiency, emphasising the features of the programmes that influence cost effectiveness. The chapter outlines the evolution of the National Emergency Employment Programme (NEEP) as a flagship intervention made by a nascent government in Afghanistan to gain political legitimacy and kick-start local economies through income transfer and construction of rural roads. The chapter uses data collected from focus group interviews conducted in various regions of Afghanistan to identify the main impact of NEEP: a safety net for drought stricken populations; a tool of sustainable development to improve connectivity for isolated populations; and, a vehicle to promote institutional development and capacity building.

Chapter 6 aims to measure real income gains, net of foregone earnings, through NEEP's role as a cash transfer programme. The chapter begins by

comparing participating households with non-participating households across various indicators including demographic characteristics, income distribution, status of vulnerability, strata etc. It uses propensity score matching to match participating households with non-participating households based on similarities in observable indicators. By comparing household incomes across these two groups, it is possible to ascertain what households would have earned had they not participated in NEEP and thereby estimate real income gains through NEEP. The chapter examines possible reasons that can influence the amount of income transferred through NEEP.

Chapter 7 analyses patterns of infrastructure utilisation in rural Afghanistan. It uses focus group and household data from five provinces and ten villages across Afghanistan to determine how and why households use rural roads. It questions whether, in fact, greater connectivity improves utilisation of services and markets. It considers the possible reasons as to why greater connectivity may not necessarily significantly change the way households utilise health services, educational institutions and markets.

Chapter 8 presents the main conclusions of this study. It identifies key recommendations on how to improve the effectiveness of programmes such as NEEP. These, in turn determine the effectiveness of post-conflict reconstruction. It also identifies possible topics for further research that would augment the findings of this study.

Chapter 2 Defining Vulnerability in Post-conflict Environments

1. Introduction

In the last two decades, vulnerability has received significant amounts of attention, not just as a distinct component of poverty but also as a concept unto itself. It concerns itself with the situation of poverty faced by households and/or individuals not just today but also over time. Academics and policy makers alike hold consensus over the fact that this dynamic nature of vulnerability requires specific attention so that appropriate responses can be devised for mitigating it. However, this is not an easy task. The very dynamic nature of vulnerability that makes it a special policy concern also makes it a complex concept to define specifically and therefore difficult to measure. There have been many attempts at defining vulnerability but they all end up focusing on uni-dimensional measures such as poverty patterns over time.

Vulnerability is inextricably linked to risks and shocks. The occurrence of a shock has two types of impacts. The first is internal defencelessness that results from reduced resources and the second is external defencelessness that results from a fragile environment. Internal defencelessness results from idiosyncratic capacities, which are specific to households and individuals and determine how the impact of the shock is internalised. External defencelessness is the result of new risks that emerge in the environment surrounding the household after the conflict. While the former reinforces poverty, the latter causes uncertainty over time. In a post-shock environment, it is the combination of these conditions that causes vulnerability.

This chapter seeks to conceptualise multi-dimensional vulnerability in a post-conflict environment. Such environments are characterised by four types of losses. These include human security, losses of exchange freedom, loss in sense of belonging and loss of access to markets and services. These losses occur because availability of resources is reduced and even when they are available, individuals and households may not be able to convert them into well-being.

Viewing such losses in a uni-dimensional way, perhaps in terms of income or consumption losses, is restrictive. For a comprehensive analysis

therefore, it is necessary to undertake a multi-dimensional analysis. Such an analysis would focus not only on the root causes of vulnerability but also the mechanisms by which a loss is translated into vulnerability. To make an effective analysis therefore, the chapter uses Sen's concepts of entitlements, capabilities and functionings to study the impact of resource loss as well as mechanisms whereby vulnerability is created.

In what follows this chapter expands the concepts introduced above to develop a comprehensive definition of vulnerability that can subsequently be applied to the case of Afghanistan, after the culmination of the conflict in 2002. Section 2 discusses risks and their relation with shocks. Section 3 elaborates the concepts of entitlements, capabilities and functionings, with particular emphasis on post-conflict environments. Section 4 formulates a framework for measuring post-conflict vulnerability in terms of entitlements. Section 5 presents a brief summary of the caveats and limitations that should be recognised in studying multi-dimensional vulnerability. Section 6 concludes.

2. Risks, Shocks and Well-being

Vulnerability pertains to uncertainty about the future, uncertainty that is caused by the existence of risks. It is distinct from the concept of poverty, which concerns itself with household well-being at a point in time. Vulnerability relates to poverty dynamics over time, which are determined by the environment an individual or household is placed in. More specifically, these dynamics are determined by the nature of risks that exist in the environment around the vulnerable household and how they are *manifested* in the form of shocks. This section seeks to understand how household well-being is affected when risks manifest themselves into shocks.

2.1. Risks

Different institutions, academics and policy makers have defined risks in various ways[7]. Risk can be defined as the probability that a loss will be

[7] The conceptualisation of risk continues to evolve over time as a result of changes in society that, in turn, have led to changing views on security. Changes in the international political order, economic environment as well as climatic conditions have created new risks thereby re-conceptualising the traditionally held views on

incurred given a particular environment (Einstein 1988, Alexander 2000, Disaster Recovery Journal 2005); or it can be defined as the expectation of losses (physical, economic etc.) in the future (Alwang et al 2001, Clarke 1999, Cardonna, 2003, ADRC 2005, Heitzmann et al 2002). While the first measures a probability of an event occurring, the latter measures, to an extent, the impact of that event i.e. the cost in terms of damages and losses incurred. For practitioners, it is a combination of these definitions that is useful in that not only is it important to determine the probability of a particular event occurring but it is equally important to ascertain the expected value of damage and loss, in order to provide countervailing measures. The World Bank (2000/2001), UNEP (2002) and UNDP (2004) have tried to concretise this concept by emphasising that risks result from exposure to hazards (Tiedemann 1992, Garatwa and Bollin 2002, Blanchard 2005). In practice, these ideas of risk are overlapping and often used interchangeably. In subsequent sections, these views of risks will be used to develop the concept of vulnerability.

The existence of risks affects populations differently. Individuals and households react to these risks depending upon their abilities. Nevertheless, three main levels of influence can be distinguished: micro, meso and macro (WDR 2000/2001). Micro risks are faced by individuals or households and are therefore idiosyncratic in nature. Meso risks threaten groups of households or entire villages/communities. Macro risks are faced by nations or regions and are usually the result of events that occur at the global level. Meso and macro risks may have idiosyncratic implications but also have a substantial covariate (general) component to them (Dercon 2005). This distinction in the level of impact is key to determine risk sharing mechanisms and suitable policy responses, a topic that we will return to in Chapter 5.

Households and individuals face a variety of risks, some of which affect well-being more directly than others (Dercon 2000). Those risks that lead to a fall in levels of income have been called damaging fluctuations (Sinha and Lipton 1999). Sinha and Lipton have compiled a list of six types of risks that give rise to damaging fluctuations. These include risks resulting from violence, natural disasters, harvest and seasonality, health, labour markets and price fluctuations. The seminal World Development Report (WDR) of

---

human security (Kaldor and Vashee 1997, Kaldor 1999, Rio 1992 and Johannesburg 2002, Brauch 2005).

2000/2001 categorises these risks in the broad categories of natural, health, social, economic, political and environmental risks.

Existence of risks in itself can have a negative impact on well-being. First, it prompts risk-averse behaviour that forces households to invest in low risk, low return activities (Norton et al 2001). This leads to inefficient utilisation of resources. Second, the mere existence of a risk may not be problematic. It is the manifestation of a risk into a downward shock that creates new risks, which increase uncertainty and reduce well-being. Therefore, to understand how risks relate to vulnerability, it is important to examine the types of shocks that risks can manifest into.

2.2. Hazards and Shocks

Like risks, a shock can refer to an event that has the *potential* to cause harm to systems, human life or property (Rahn 1996). Unlike risks however, once shocks occur, they have an *actual* impact in inflicting harm (Blanchard 2005). Holzmann and Jorgensen (1999) have provided a useful framework to comprehend the relationship between shocks and risks. They argue that it is important to gain a sense of the circumstances under which risks can become harmful i.e. convert themselves into shocks or hazards. They highlight three distinctions of shocks. The first distinguishes catastrophic and non-catastrophic shocks. Catastrophic shocks have a high negative impact but a low frequency. Non-catastrophic shocks are therefore those that occur with a high frequency but are not necessarily severe in their impact. The second distinction compares idiosyncratic and covariate shocks[8]. While the former affect only certain members of society, the latter affects the whole society, at the same time. The third distinction distinguishes single and repeated shocks. Single shocks are one-off shocks that can give rise to further risks whereas repeated shocks can be cyclical. The key here is that a particular one-off shock can create a cycle that repeats itself and can therefore exponentially impact well-being in a negative manner.

Shocks occur when risks manifest themselves into events. To understand the interplay between risks and shocks, it is necessary to consider the broad

[8] The term covariate shock has been used in the literature to refer to shocks that have a general impact on a large group of people. This paper will henceforth adopt this definition for the term.

categories of risks that households and individuals may be exposed to. These include universal risks, life-cycle risks and categorical risks (De Neubourg and Weigand 2000). Universal or covariate risks, in principle, affect all members of society, albeit not necessarily in the same manner and each member's response depends upon their resilience i.e. their capability to sustain these risks in the event that they materialise. Life cycle risks, also in principle can be shared by all members of society but they include an element of specificity, which reduces their level of influence. An example of these risks is old age that directly affects the entire aged population of a society but has only an indirect impact on other members. Categorical risks or idiosyncratic risks are peculiar to certain groups within society and can result from a number of factors. For example, they could be an occupational hazard or they could result from affiliation with certain groups within society or they could be a consequence of having certain capabilities that enable only specific responses to shocks.

Shocks affect different groups of people in different ways, depending upon existing levels of well-being: the poorer the individual or household, the more negative the potential impact of shock. The effects of risks can be defined in three broad categories (De Neubourg and Wiegand 2000). Incident effects are those that are directly related to an event and disappear after a short period of time. Lifetime effects have a long lasting impact, perhaps over the entire lifetime of the members of the household individuals. Inter-generational effects are those that not only last over one individual's lifetime but can also spill over into future generations. While these effects are directly related to the risk they are borne out of, they occur only when the risk is manifested by an event (a shock or hazard). This distinction is crucial when discussing the effects of conflict as a complex emergency.

Understanding the nature and impact of the shock as well as the level at which it occurs is crucial for two reasons. First, it helps identify the nature of losses incurred and the affected population. Second, it determines the type of response mechanisms that are ideally suited to cope with negative impacts. The next section highlights characteristics of post-conflict environments, which lead to creation of losses. Response mechanisms will be discussed in subsequent chapters.

2.3. Conflict as a Negative Shock

The definition of conflict has evolved significantly over time and has varied depending upon the situation being considered. It has been defined as a struggle between opponents over values and claims to scarce status, power and resources (Coser, 1956). Conflicts can also be viewed as strategic bargaining situations in which the actions of one participant will determine the choices and decisions made by the other (Schelling, 1960). A conflict can be an incompatibility where one party's actions interfere, obstruct or in some way render less effective the actions of another party (Deutsch, 1973). It could be a process in which one party attempts to undermine another party's goal attainment (Wall 1985). The cause of the problem is the interdependence between the two parties, the differences in their goals and the differences in perceptions between these parties. A conflict could be a simple result of a divergence of interests, which is manifested in a belief that the parties' current aspirations cannot be achieved simultaneously (Pruitt and Rubin, 1986). Other authors in the last decade have built on the incompatibility argument: incompatibility between cooperative as well as competitive groups (Tjosvold and van de Vliert 1994) and incompatibility between goals of two groups of people and a perception of interference from each group (Folger, Poole and Stutman, 1997).

On the one hand, conflicts could manifest themselves in a healthy rivalry which promotes competitiveness and greater efficiency. On the other, conflicts could manifest themselves into violence, which is when they become 'active'. According to a comprehensive list of definitions prepared by the Department of Peace and Conflict Research at the Uppsala University, an active conflict occurs when there occur more than 25 battle-related deaths in one conflict area as a direct result of warring behaviour between at least two parties; the cause of violence being incompatibility. Incompatibility could be territorial i.e. concerning the status of a particular territory or it could concern the government and the type of political system in place, the aim being the replacement of central government or change of its composition. The conflict could be intra-state, where the state is in conflict with another non-state party and there is no outside intervention; or, it could be inter-state, which is a conflict between two or more governments.

In order to hypothesise about post-conflict vulnerability, it is important to identify the characteristics of post-conflict environments that create vulnerability. Studying these characteristics is important because they either create or contribute towards losses, which lead to vulnerability and negative well-being.

2.3.1. Characteristics of Post-conflict Environments

Based on the definitions provided by Uppsala University, the type of conflict considered in this study is specific. It is prolonged in nature, with elements of ethnic conflict, warlordism and invasion by a foreign entity. The post-conflict environment that results from the constellation of these three components has various characteristics. The literature has been summarised to compile a list of features that are characteristic of environments that have faced complex emergencies particularly that are in the post-conflict phase (Carbonnier 1998). It may be remembered that characteristics of post-conflict environments differ depending upon the nature and extent of the conflict. What is presented below is a brief summary of just some key features.

Post-conflict environments are usually characterised by a fragile peace that is often accompanied by continuing crisis of political legitimacy, inequality and instability. Possibility for corruption and criminality remains high due to easy and plentiful availability of weapons. In the post-conflict phase, human rights may not be effectively enshrined through legal and constitutional measures. Moreover, it can perpetuate inequalities by ensuring that certain groups maintain hegemony over others. Concerns of inequality are rarely made an explicit part of the post-conflict peacebuilding[9] agenda, even when such inequalities may be an explicit

[9] The term peacebuilding has been used widely since Boutros Boutros Ghali (UN Secretary General) used it extensively in his Agenda for Peace (1992). Boutros Boutros-Ghali, *An Agenda for Peace: Preventive Diplomacy, Peacemaking and Peace-keeping* Document A/47/277 - S/241111, 17 June 1992 (New York: Department of Public Information, United Nations) 1992. http://www.un.org/Docs/SG/agpeace.html John Paul Lederach, *Building Peace: Sustainable Reconciliation in Divided Societies* (Washington, DC: United States Institute of Peace Press) 1997 summarised the concept to involve a long-term commitment to a process that includes investment, gathering of resources and materials, architecture and planning, coordination or resources and labour, laying

cause of conflict (Stewart 2005). Post-war reconstruction is marred by a scarcity of resources, which implies that certain reconstruction activities will be implemented while others may not be. This can lead to exclusion of certain groups and furthering of tensions (Cliffe et al 2003). Related to this, Azam et al (1994) point out that civil wars lead to a breakdown of civil society, negatively influencing institutions of social capital and channels of accountability. For the victims of war, this implies not only a breakdown of both informal as well as formal means of support. This is particularly relevant because war creates new vulnerable groups, with different and urgent needs, which if not addressed could lead to humanitarian emergencies (Bodewig 2002).

One of the key costs that plague post-conflict environments relates to the economy. The link between wars and low GDP is quite strongly established. Weak judicial, financial, fiscal, administrative and regulatory capacities of the state make it difficult for a newly appointed infant government to establish revenue generating and development initiatives. This is exacerbated by the lack of confidence and trust among socio-economic actors. Due to the uncertainty that mars post-conflict environments, private actors choose to maintain their wealth in the form of liquid assets that are easily redeemable. This implies low levels of investment and a burgeoning informal sector, most likely involved in extra-legal activities (Azam et al 1994, McKechnie 2003). These activities remain outside the control of the state and therefore, cannot be regulated. The resultant fiscal deficit is funded by inflation, which affects the poor and they end up paying for the war. Such practices reduce the multiplier effect of any reconstruction work and end up harming economic and administrative structures as well as the delivery of public services (Fitzgerald 1987, 1996).

Political and economic priorities in post-conflict environments are guided, on the part of both national governments and aid agencies, by concepts of structural adjustment and humanitarian relief designed for use in peacetime (Fitzgerald 1997). Because the government and state structures do not have the capacity to reach the entire population, they hire the services of international NGOs and aid agencies whose work is dictated by their own mandates. This can lead to ad hoc programming. Lack of funds due to weak or non-existent revenue also implies a high reliance on foreign aid. As

---

solid foundations, construction of walls and roofs, finish work and ongoing maintenance.

Collier and Hoeffler (2002) point out, this aid is usually ineffective in the first three to five years after conflict and does not lead to economic growth.

The shortage of skilled workers is also a characteristic of post-conflict environments. Stiefel (1994) finds that both during conflict and after the conflict has ended, there is a significant out-migration of skilled workers making reconstruction efforts difficult. There is widespread unemployment and under-employment amongst the semi and unskilled workers that remain or are returning refugees and internally displaced people (IDPs). The UNHCR (2006) highlights some of the problems faced by IDPs that include problems of separation, risk of HIV/AIDS, sexual exploitation, forced labour, slavery, abuse and violence, forcible recruitment into armed groups and trafficking. The interaction between local populations, IDPs and returning refugees can fuel resentments that could lead to a resurgence of conflict. These factors fuel migration of skilled workers and reinforce the shortage of skilled workers.

One feature of post-conflict environments that is often ignored both by academics as well as policy makers is the situation of women (Sorenson 1998). While women are marginalised in the formal peace building process, their role at the grassroots level remains active. Moreover, given that more men die in wars than women and that even after the conflict has ended men serve in private armies, women have to assume the role of the primary bread winners and caretakers of their families. Coupled with the fact that women may not be exceptionally educated, even the employment opportunities they could avail would be low paying jobs (Bodewig 2002). In culturally sensitive environments where involvement of women in the labour market is not the norm, women either remain unemployed or become underemployed. The status of women in post-conflict societies is related also to infant mortality rates. Stewart et al (1997) find that in the aftermath of wars, infant mortality rates increase and the main reason for this is low levels of education of women, low immunisation and unhygienic sanitation conditions.

These characteristics contribute towards losses, which lead to vulnerability and reduce well-being. A thorough analysis of these losses is essential to understand the link between characteristics of the post-conflict environment and vulnerability.

2.3.2. *Nature of Post-conflict Losses*

Characteristics of post-conflict environments can be summed up in four broad categories of losses[10]. The first is human security, which according to the UNDP's Human Development Report (HDR), hinges upon seven areas of security: economic, food, health, environment, personal, community and political. Such a categorisation does not only leave the idea of human security broad and vague, these categories are not always distinct. In practice, the lines between these categories remain blurred. Also, particularly in post-conflict environments, due to funding constraints and prioritisation, aspects of security, such as environmental concerns, are usually ignored in reconstruction. The second is loss of exchange possibilities, which is directly linked to a fall in resources. Not only are there fewer resources to exchange, the freedom to exchange existing resources is also reduced due to the fragmented nature of markets. The third is a loss in social capital which erodes the sense of belonging or being part of a community. This implies that informal sources of support are diminished. The fourth category is a loss of access both to services and institutions. The destruction of physical infrastructure reduces access to markets and services such as health and education while the destruction of social infrastructure reduces access to state institutions.

These losses create vulnerability in that they reduce household resources at a point in time, which in turn, creates uncertainty about the future. As a shock, conflict has a covariate (macro or universal) nature in that it changes the environment of the affected population. It also has an idiosyncratic or categorical component, which depends upon how the macro effect trickles down to the micro-level. The response at the micro-level can vary across households and individuals depending upon the differing levels of resilience to cope with the effects of war. It has incident effects that are directly related to the war as well as lifetime and intergenerational effects that impact not only the lifetime of the households and individuals involved but also their future generations.

One look at the categories mentioned above is sufficient to determine that these losses signify more than material deprivation and measuring them

[10] This list is by no means exhaustive and can vary according to the type and location of conflict being considered. However, this research limits itself to the impact of these categories on well-being.

simply in terms of reduced income would be a fallacy. Also, these losses occur not only because of a fall in resources but also because the breakdown of the process by which these resources are converted into well-being. Therefore, in linking these losses to vulnerability, it is important to consider three factors: the fall in resources, well-being and the process by which resources are converted into well-being.

In order to capture the multi-dimensionality of vulnerability it is necessary to evaluate those factors that create vulnerability. This necessitates an examination of the causes of vulnerability as well as the processes by which vulnerability is created. A suitable way to reflect these dynamics would be in terms of Sen's notions of entitlements and capabilities.

3. Entitlements, Capabilities and Functionings[11]

In a nutshell, the capability approach argues that individuals are poor if they do not have the freedom to achieve their goals of well-being and they are vulnerable when this lack of freedom persists over time (Sen 1999). This notion of well-being, as a loss of freedom, requires elaboration of the concepts.

The key idea is that an individual's state of being can be viewed as a vector of functionings; achieved outcomes that determine life and living. Functionings are discrete heterogeneous set of most basic reasons for acting (Alkire 2002) and are the achieved outcome in each situation in life. These could include for example, being healthy, well nourished, involved in local activities etc. These functionings are attained by utilising resources over which individuals have legal ownership rights, what Sen (1981) called entitlements.

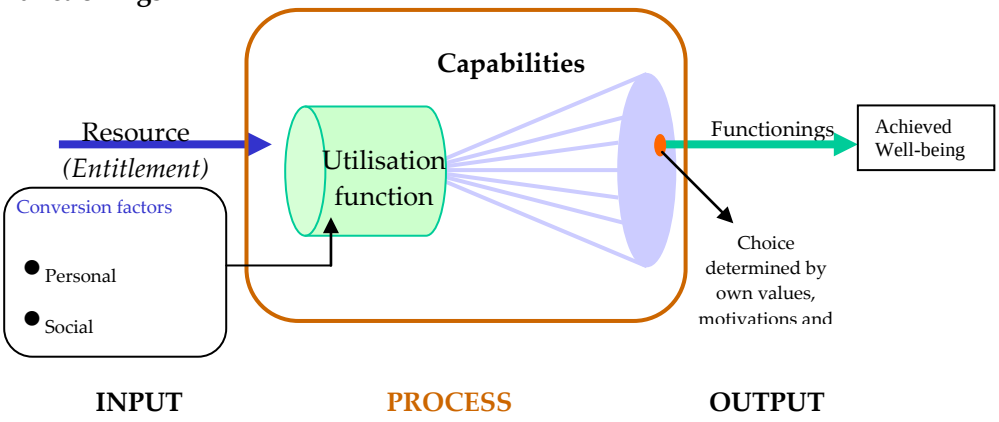
Provision of or existence of resources and entitlements is not sufficient to be able to achieve a certain functioning. The process of converting entitlements into functionings is the freedom to be able to do so. Freedom has two aspects: one that focuses on fostering appropriate procedures and the other that emphasises generating adequate opportunities. The former determines

[11] The information presented in this section is based on a detailed review of various publications. These include: Alkire (2002a, 2002b), Clarke (2006), Devereux (2002), Chambers (1995), Narayan et al (2000), Sen (1981), Dreze and Sen (1989), Sen (1991), Sen (1997), Sen (1999).

the process flows that allow individuals to choose from these options while the latter relates to the myriad of options that contribute towards individual well-being. This choice means that individuals exercise their free agency to determine their notion of well-being and the options that help them achieve it.

Figure 1 captures the link between entitlements, capabilities and functionings as conceptualised by Sen.

Figure 1: Relationship between Entitlements, Capabilities and Functionings



Source: Adapted from Muniz (2009)

As the diagram suggests, individuals utilise their entitlements to attain functionings depending upon the personal, social and environmental circumstances in which they find themselves. This process of utilisation, which Sen has called capabilities, in effect, makes individuals and households free in their choice of functionings, a choice, which in turn, is determined by values, motivations and dynamics of society around them. This diagram proposes a continuum where resources are processed to produce an output: a particular state of being. The loss in functionings occurs because individuals lose freedoms/capabilities in a number of categories because they no longer have access to and control over necessary entitlements.

Functioning and capability losses are vague, arbitrary and difficult to measure. Functionings are broad states of being that reflect well-being. Capabilities are processes: the ability to access *and* utilise resources. Therefore, in order to link vulnerability with functioning losses, the starting point is entitlements: the types of entitlements do households have access to and how these are converted into well-being. As a result, when trying to concretise a notion of vulnerability in post-conflict environments, the first step in the chain is entitlements.

3.1. Entitlements

The concept of entitlements, developed by Sen (1981) while analysing famines and starvation, focuses on command over resources and commodity bundles. "Entitlements refer to a set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces" (Sen 1984, pg 497). The idea encapsulates an individual's ownership (endowment set) as well as the available exchange possibilities (exchange entitlements). It is on the basis of entitlements that an individual can acquire functionings. The bundle of these is determined by the free choice of the individual as well as the process of converting entitlements into functionings. In this regard therefore, "the particular role of entitlements is *through* its effects on capabilities"; entitlements are a means to an end (Sen 1984, pg. 497-498).

Sen (1981) focuses on four main categories of entitlements three of which are production based, trade based, own labour entitlements. Entitlements that individuals gain from these resources determine their endowment set and their exchange possibilities. Simply stated, they determine what resources an individual can access and command to attain certain functionings. However, if individuals are unable to gain access over a significant amount of resources through these three and are thus unable to achieve their objectives of well-being, a fourth type of entitlement was identified: inheritance and transfer entitlement. While this type covers a broad gamut of entitlements gained from informal sources, they also include conferred entitlements, usually transferred by an external body. These could take the form of charity or channelised through the support of organisations such as the government or NGOs[12].

[12] This discussion is related to how households respond to risks, which will be dealt with in detail in subsequent chapters.

Low entitlements are a key characteristic of poverty in that they imply a low level of resources available to enhance well-being. The lower the ability to own (possess) and exchange (consume) commodities, the lower the ability to achieve functionings (Kakwani 2006). Kakwani agrees with Sen in that defining poverty in terms of insufficient capabilities would be incomplete if income was not taken into account since the capability function is derivable from income and wealth. He does emphasise however, that the link between entitlements and capabilities is not simple since it may not always be possible to convert an entitlement into a capabilities function.

3.1.1. Limitations of the Concept

Sen (1981) has highlighted at least four key limitations of the approach. First, he acknowledges that entitlements may be difficult to specify, both conceptually as well as empirically. Conceptually identifying an exact set of entitlements can be tricky and at best be characterised by fuzzy set relations. Empirical analysis can be restrictive due to data constraints[13]. Second, while entitlement relations are defined within the given legal structure within a society, entitlements can be exchanged in an extra-legal manner through illegal activities. In cases, where such activities dominate, the entitlement approach may not be fully applicable since existing structures of entitlements are violated. Third, specifically for the case of famines, Sen argues that food consumption of people may fall for a variety of reasons other than a lack of entitlements, which could include apathy, ignorance or fixed food habits. Finally, famine mortality is distinct from famine related deaths; the former could be caused by epidemics and not necessarily by the absence of a right to food.

Devereux (2001) has elaborated on each of these limitations to show that they render the approach conceptually weak in assessing shocks. There are two primary reasons for this. First the approach does not recognise individuals as socially embedded within a structure be it household or community. Second, the approach is unable to explain the complex social and political milieu within which a particular shock occurs.

[13] Sen does acknowledge that while the theoretical focus can still be on exactitude, it is possible to study the main ingredients of entitlements.

The next section applies the ideas of entitlements, capabilities and functionings to the characteristics of post-conflict environments, described in Section 2. Such a framework would not only capture the multi-dimensionality of losses that are prevalent in post-conflict environments but also help quantify them.

3.2. Entitlements, Capabilities, Functionings and the Post-conflict Environment

Post-conflict environments are characterised by losses, which, according to the terminology described in this section, are called functionings. These include the loss of human security, exchange freedom, social capital and physical infrastructure. These functioning losses make households vulnerable to a fall in well-being. Table 1 presents a list of those entitlements that lead to these functioning losses as well as those capabilities that prevent households from converting their entitlements into functionings.

Table 1: Losses in Post-conflict Environments

<table>
<tr><th>Entitlements</th><th>Capabilities</th><th>Functionings</th><th rowspan="12">Well-being</th></tr>
<tr><td>Income</td><td>Ability to utilise income to maintain stable flows</td><td rowspan="6">Human Security</td></tr>
<tr><td>Ownership of homestead</td><td rowspan="5">Ability to maintain a standard of living</td></tr>
<tr><td>Sanitation</td></tr>
<tr><td>Clean drinking water</td></tr>
<tr><td>Food security</td></tr>
<tr><td>Fuel for heating and cooking</td></tr>
<tr><td>Sources of credit</td><td rowspan="6">Ability to access productive and labour resources and assets.

Ability to utilise these resources</td><td rowspan="6">Exchange Freedom</td></tr>
<tr><td>Ownership of livestock</td></tr>
<tr><td>Ownership of land for cultivation</td></tr>
<tr><td>Human Capital</td></tr>
<tr><td>Employment in income generating activities</td></tr>
<tr><td>Ownership of tradable assets</td></tr>
<tr><td>Membership in community organisations</td><td>Ability to interact with others</td><td>Sense of belonging</td></tr>
</table>

Sources of Information			
Mutual help/support			
Physical infrastructure	Ability to access markets and social services	Access	

The table above highlights the process (what Sen defined as the freedom or capability) through which entitlements are converted into functionings. In the context of post-conflict environments, functioning losses occur because the availability and utilisation possibilities of entitlements are reduced. Achieving a desired state of being (functioning) depends upon the ability to access and utilise (capabilities) entitlements (resources).

The level of human security depends upon access to and availability of regular income flows, wealth that helps smooth consumption and basic amenities that contribute towards well-being. Regular income flows depend upon at least three factors. First, if mean income is low, the capability to save for a 'rainy day' is reduced. Second, because income generating activities are mainly in the informal sector, it is difficult to ensure a regular income flow. Third, income sources may not be diversified so that if one income is irregular, sources of recourse are insufficient. Having wealth helps smooth well-being over time but in order to convert it into human security it is necessary that wealth can be utilised. For example having a house implies availability of wealth but no registration deed implies it cannot be sold to generate resources when the need arises. Access to basic amenities such as sanitation facilities, drinking water, food for consumption and heating and shelter determines the standard of living, which households can maintain over time. Sanitation facilities, source of drinking water and access to food relate to health while heating and shelter determine the nature of protection the households have against extreme climatic conditions.

Having the freedom to exchange entitlements is necessary at a point in time to manage the negative impact of shocks; this exchange eventually contributes towards greater resilience. Exchange entitlements could be produced, such as cultivation using land. They could be based on labour resources which can be hired out for other entitlements. The extent to which this is possible depends upon the acquisition of human capital. They could be traded for other required resources. Such entitlements include assets. In

order to freely exchange these entitlements for others, it is necessary that households not only possess these resources but also have the ability to be able to utilise them for exchange purposes.

Social capital determines the sense of belonging for individuals and signifies, at least in part, the nature of informal risk management and is enhanced when individuals interact with each other. Social interaction can take many forms that are difficult to specify in terms of concrete and tangible entitlements. Therefore, when identifying entitlements that increase social capital, this research focuses on membership in community organisations, nature of mutual support within community and sources of information. The existence of community organisations provides a platform where community members can interact with each other. Nature of support determines the type and frequency of support households extend towards each other. Having access to information determines how well individuals are informed about the goings on around them. Such awareness is particularly relevant when thinking about development interventions, which require community participation to derive benefits.

Finally, physical communications infrastructure such as roads, enables households to utilise their entitlements. Communications infrastructure directly enhances access to services such as health and education as well as markets. Access to markets provides exchange possibilities while access to health and education facilities improve living conditions as well as labour entitlements.

Table 1 and the discussion above highlight the fact that the occurrence of conflict has two main types of impacts: one is a reduction of entitlements and the other is greater uncertainty. Reduction of entitlements affects an individual or household's resilience i.e. their ability to respond to the occurrence of shock. Uncertainty results from prevalent risks and affects the environment surrounding the individual or household. How the individual or household interacts with this uncertain environment depends upon the entitlements that are available to them.

This link between the uncertain environment and available entitlements is critical to the concept of vulnerability. Vulnerability is caused when available entitlements are insufficient to protect households from risks that threaten well-being. This link is elaborated in the next section.

4. Vulnerability

Vulnerability received academic and policy emphasis in the late 1980s and early 1990s with the works of researchers such as N. S. Jodha (1988) and Robert Chambers (1995) on 'Voices of the Poor'. This exercise was based on soliciting from the poor, assessments of their economic status. It highlighted that the poor were concerned not only with income poverty that they face today but also in the future; the uncertainty that would mar their earning capabilities and potential in the future. In addition to uncertainty, the poor were also concerned with social inferiority, isolation, physical weakness, powerlessness and deprivation. More specifically, "[vulnerability] …means not lack or want but exposure and defencelessness. It has two sides: the external side of exposure to shocks, stress and risk; and the internal side of defencelessness, meaning a lack of means to cope without damaging loss. Loss can take many forms – becoming or being physically weaker, economically impoverished, socially dependent, humiliated or psychologically harmed" Chambers (1989 pg 189). In developing countries, where major parts of the population are destitute from the outset, vulnerability exacerbates their deprivation and can adversely affect well-being.

Before identifying the nature of vulnerability in post-conflict environments, it is important to develop a workable definition of the phenomenon itself. The next section summarises some of the definitions that are commonly used for vulnerability while Section 4.2 outlines the limitations of these definitions. With the help of this review, Section 4.3 develops a workable definition of vulnerability and Section 4.4 applies it to the case of post-conflict environments.

4.1. Dimensions of Vulnerability, Risk and Resilience

A review of the existing literature on vulnerability suggests that it is an amorphous concept; there is no single definition of vulnerability that fully encompasses its complexity, its dynamic nature and its multi-dimensionality. Birkmann (2007) has synthesised the literature[14] and identified twenty-five commonly accepted definitions. These can be

[14] Musser 2002 has compiled a comprehensive vulnerability bibliography that lists the keystone publications on the topic.

classified in at least five categories. On a broad level, vulnerability can be defined as exposure to risk or the level (magnitude) of exposure to risk. In some situations however, this relation to risk can be problematic. Cardonna (2003) points out that vulnerability is often used to refer to risk or to define disadvantaged conditions. Using vulnerability and risk interchangeably ignores the crucial question: vulnerable to what? Cardonna's logic is that shock and vulnerability are connected and they lead to risk. If there is no danger of a shock, there is no danger of potential damage. Alexander (2000) clarifies this point further: "…vulnerability refers to the potential for casualty, destruction, damage, disruption or other form of loss in a particular element: risk combines this with the probable level of loss to be expected from a predictable magnitude of hazard". Some authors have phrased this differently and argue that vulnerability is the susceptibility of a system to shocks.

There are a number of strands in the existing literature that seek to define vulnerability (Alwang, Siegel and Jorgenson (2001)). Within the economics literature, vulnerability is viewed as a process of household response to risks in given conditions. The emphasis here is on the ex-post state, in other words, the outcome. Therefore identifying indicators for measuring outcomes is crucial. The poverty dynamics literature views vulnerability as the ex-post movement into and out of a state of poverty, making it a dynamic process. The state of poverty is defined by money metric figures such as poverty lines. The asset-based approach views poverty as inadequate access to assets and vulnerability as the probability of falling below a benchmark level of loss of degradation of assets. The sustainable livelihoods literature views vulnerability as the combination of two sides: an external side of risks and an internal side of inability to mitigate these risks without incurring losses. A more specific variant of this is the food security approach that combines the affect of risk and the ability of an individual or household to cope with these risks and to recover from a shock or deterioration of current status. The sociology/anthropology literature includes non-money metric dynamics of vulnerability that are not captured by the economics literature. The disaster management literature focuses on emergency relief and risk mitigation.

Vulnerability is inextricably linked to resilience in that it captures the extent to which individuals are able to prepare for tomorrow by nurturing coping measures (Briguglio et al 2008). Many authors also agree that depending

upon their conceptualisation, vulnerability and resilience can be treated as reciprocal (de Leon 2006). The concept of resilience itself is debated within the literature (Birkmann 2007). It could refer to the capacity of a system as well as individuals and households within that system to absorb shocks. It also could refer to the ability of a system to respond to a change in terms of adapting to it; the focus here is on the system's regenerative capacities. While citing Adger et al. (2005) and Allenby and Fink (2005), Birkmann summarises the concept of resilience as the "…capability of a system to maintain its basic functions and structures in a time of shocks and perturbations".

By including the idea of resilience, the definition of vulnerability can be expanded. Vulnerability can be defined as a set of conditions that negatively affect the ability of people to prepare for and withstand disasters (Warmington 1995, Lewis 1997, 1999). Others (Varley (1994), Blaikie (1994), Bolin and Stanford (1998)) have tried to explicitly relate this general set of conditions to individual characteristics of people. These characteristics are determined by the interplay of circumstances within which people find themselves (which include social, economic, political and environmental) as well as structures (such as class, gender, age etc.). Such interplays can have negative outcomes such as poverty, inequality etc, which have varying manifestations across different groups. These outcomes also determine the level of resilience people (households and individuals) have against shocks.

Perhaps the most succinct effort at combining these various aspects of vulnerability is made by Pelling (2003). He argues that vulnerability is the combination of exposure, resistance and resilience. Exposure defines the location of actors (system, individual or household) with respect to a hazard or shocks. Resistance relates to the capacity of actors to withstand the impact of hazards or shocks. Resilience then is the ability of the actor to cope with and/or adapt to the shock.

Wisner et al (2003) have tried to concretise this notion (particularly for natural disasters) through the Pressure and Release (PAR) and Access models. The idea of the PAR models is that vulnerability results from the "…intersection of two forces: the processes generating vulnerability on one

side, and the natural hazard event on the other."[15] The models propose a progression of vulnerability, over three stages: root causes, dynamic pressures and unsafe conditions. "Root causes reflect the exercise and distribution of power in a society (pg. 53)." Politically and economically weak and marginalised groups are usually not important to those who hold power. These groups are vulnerable because their access to resources is low and their sources of livelihood precarious. In addition, these groups are considered a low priority for government intervention. Finally, marginalised groups of people tend to lose confidence in their own capabilities to respond to shocks. "Dynamic pressures are processes and activities that translate the effects of root causes both temporally and spatially into unsafe conditions" (pg. 53). Wisner et al recognise that these processes themselves may not induce vulnerability per se. They however do acknowledge that this is a field for wider research. Emphasising and elaborating these dynamic pressures is useful because it helps identify unsafe conditions. "Unsafe conditions are the specific forms in which the vulnerability of a population is expressed in time and space in conjunction with a hazard" (pg. 55). Unsafe conditions are dependent upon initial levels of well-being.

The access model "…sets out to explain at a micro-level the establishment and trajectory of vulnerability and its variation between individuals and households. It deals with the impact of a disaster as it unfolds, the role and agency of people involved, what the impacts are on them, how they cope, develop recovery strategies and interact with other actors" (pg. 88). Wisner et al provide a detailed outline of the model. "Households earn their livelihoods in normal times and are subject to unsafe conditions and the political economy in which they all live is also shaped by social relations and structures of domination. The trigger even occurs and impacts upon social relations and structures of domination and upon households themselves" (pg. 88). This initiates what Wisner et al refer to as the "transition to disaster". The model also captures the course that the disaster takes and how it alters conditions of vulnerability and social protection. The model assumes that decisions regarding livelihoods are made in a given political, social and economic environment. This environment also includes those precautionary measures that are taken to protect the livelihood

[15] Pg. 50, Wisner, B., Blaikie, P., Cannon, T. and Davis, I. (2003). "At Risk: Natural Hazards, People's Vulnerability and Disasters," Second Edition. London: Routledge.

against shock. When a shock occurs, it influences the environment within which livelihood decisions are made as well as the precautionary measures that safeguard the livelihood. The combined impact of these influences causes vulnerability.

Most recent definitions of vulnerability combine the impacts of internal and external defencelessness. "The underlying causes of vulnerability are economic, demographic and political processes that affect the assignation and distribution of resources among different groups of people" (Cardonna 2003). Vulnerability is correlated with the level of development and results from physical exposure, socio-economic fragility and lack of resilience. By not thoroughly analysing the structural causes of vulnerability, the focus is shifted from the root causes of the problem. This incomplete analysis increases the danger that 'vulnerable societies' are seen as passive and non-responsive, requiring external support for their development (Prowse 2003). In order to increase the understanding of the *process* of vulnerability, it is important to place an increased emphasis on people's entitlements and how these are used to respond to shocks.

Hodinott and Quisumbing (2003) also provide a toolkit to undertake quantitative risk and vulnerability assessments, using household data. They focus on three specific conceptualisations of vulnerability. These include vulnerability as expected poverty, vulnerability as expected low utility and vulnerability as uninsured exposure to risk. While these three approaches are relevant in themselves, they tackle the notion of resilience and exposure to risk separately. Moreover, they rely on either simplistic measures such as consumption or vague measures such as utility. Such measures capture the incidence of poverty and focus on households just above the poverty line. This makes it difficult to quantify the multi-dimensionality of vulnerability.

Based on a thorough analysis of several empirical studies, it can be concluded that the distinction of internal and external defencelessness put forth by Chambers is a useful way of approaching the topic (Bohle 2001). He identifies three ways in which internal and external defencelessness can be characterised. First is the structure (external defencelessness) and agency (internal defencelessness) model. This allows for a distinction to be made between the causes of vulnerability: is it a deficiency in the structures that causes insufficient resilience or is it a lack of action from agents that results in insufficient resilience? The example of the Bengal famine is instructive

(Sen, 1981): was it the government's inability to distribute grain amongst the affected population or simply the inability of the people to produce more?

The second is the 'access to assets' model (Moser 1998), which attempts to determine the nature and level of resilience within a society. The access to such assets is determined by the political economy and how integrated communities are within the societies around them.

The third characterisation revolves around the conflict and crisis theory that captures the cycle of risks and coping capacity. One determines and feeds into the other. According to this theory, access to resources is determined by risk and criticality while capacities to cope depend upon the overall vulnerability context. This approach is useful because it captures the interplay between risk and resilience, emphasising the causal structures as well as the impact of vulnerability. The comprehensiveness implied by this approach makes it useful for vulnerability assessments.

Using such conceptual frameworks to model vulnerability resonates strongly with the notions of internal and external deprivation. Livelihood decisions that are taken by individual households determine internal defencelessness while the social, political and economic environment, within which these decisions are taken, determine the external defencelessness. The nature of and access to resources is determined by the internal environment of the household reacts with the external environment in which households are located. Using these resources, households react to the external environment in which they are located.

Nevertheless in trying to make vulnerability more tangible, these models have a number of shortcomings. These are discussed in the next section.

4.2. Shortcomings of Existing Approaches

Most definitions of vulnerability tend to be general, emphasising what Chambers (2006) has called external defencelessness. They do not give much information about how individuals and households respond to shocks. The second problem with these definitions is that they ineffectively address the concept of resilience, what Chambers has called internal defencelessness. Exposure to risk is a problem for those who do not have sufficient resources to protect themselves against shocks.

This generalisation creates a tendency to use vulnerability as a substitute for poverty (Chambers, 2006). Such a substitution obfuscates the issue: "poverty is often defined by professionals for convenience of counting, in terms of flows of income or consumption. Anti-poverty programmes are then designed to raise incomes or consumption and progress is assessed by measures of these flows. Indicators of poverty are then easily taken as indicators of other dimensions of deprivation, including vulnerability."[16]

Vulnerability assessments carried out by international and donor organisations tend to emphasise transient poverty rather than the intergenerational transmission of poverty (Tesliuc 2002). The focus remains on the poverty process and not the risk management efforts undertaken by households. Moreover, due to the constraints of available data, vulnerability assessments are reduced to one-dimensional.

The approaches mentioned in the previous section focus on the components of vulnerability but they examine vulnerability in isolation. Vulnerability is a complex phenomenon that results from the interplay of various factors, which are altered by the very process of development itself. Dynamic processes evolve, while root causes and unsafe conditions change. These transform the very nature of vulnerability.

Models such as the PAR face two shortcomings. First, the model does not provide a thorough analysis of the pressure points i.e. the points at which the shock begins to unfold. Second, the PAR model is static and does not account for the change either before, during or after the onset of a shock. It gives no information on the 'normal life' before the shock hit (pg. 88). To this end, the PAR model should be augmented with the access model, which tries to analyse the nature of access that people have to resources that can contribute towards reducing vulnerability.

To summarise, current approaches in defining vulnerability suffer from three key shortcomings. First, while in theory these approaches are comprehensive, in practice they remain uni-dimensional, emphasising

[16] Pg. 33, Chambers, R. (2006). "Vulnerability, Coping and Policy (Editorial Introduction)." IDS Bulletin, Vol. 37, No. 4, pp. 33-40.

either income or consumption shortfall[17]. Second, they are vague about the causal mechanisms of vulnerability. Most of these approaches do not identify the root causes of vulnerability and the process by which these causes translate into a fall in well-being. Third, "...vulnerability assessments will reflect specific objectives of the practitioner and the resources – time, money and data – available for this work" (Hodinott and Quisumbing 2003). The next section presents a conceptual framework that addresses these shortcomings.

4.3. Components of Vulnerability

Based on the review above, any workable definition of vulnerability should incorporate resilience as well as uncertainty[18]. Resilience is dependent upon the level of entitlements that households have access to. Uncertainty is determined by the types of risks to which households are exposed. Lack of entitlements reinforces the threat that when a risk manifested into a shock, households will not be able to respond. There would be a resultant fall in well-being, which causes a greater fall in resources, at the same time adding to uncertainty about the future.

4.3.1. Lack of Entitlements

The effects of a shock lead to a downward fall in entitlements, reducing the ability to cope with the impact of shock. Entitlements define the relationships between households or individuals and those resources that can be used to 'get relief'. In addition, the focus here is on the level of entitlements at a moment in time that influences an individual or household's ability to deal with risks and shocks at that moment as well as into the future. This is the level of resilience households and individuals possess against unforeseen shocks. The lower the level of entitlements the less is the ability of agents to protect themselves against negative manifestations of risks.

[17] Usually such indicators are a good predictor of other measures. However, in post-conflict environments, where economies are based on barter trade and other forms of non-monetary exchange, these measures do not predict causes of vulnerability well.

[18] Key authors that have tried to incorporate the idea of resilience and uncertainty into the definition of vulnerability include Scoones (1997), Twigg (2001) and Heijmans (2001)

Thinking of vulnerability as, at least in part, resulting from the lack of sufficient entitlements to maintain a level of well-being borrows from the poverty dynamics literature, which suggests that vulnerability is the movement around a pre-determined poverty threshold over time.

4.3.2. Exposure to Risk

According to the WDR 2000/2001, exposure to risk refers to the probability that a risk will occur. Risk refers to those uncertain events that can lead to a fall in well-being; 'uncertain' because the timing and magnitude of these events is not known. As conceptualised here, exposure to risk contributes towards vulnerability in two ways. First, risks can manifest into shocks in the future, leading to deprivation for those who are unable to maintain a minimum standard of well-being when faced with these shocks. Second, it leads to uncertainty about the future, wherein the probability of a potential risk manifesting itself becomes higher making it inter-temporal in nature. It is this indirect impact of exposure to risk that has a greater influence in making an individual or household vulnerable. It is compounded by the fact that such prolonged exposure to risk inhibits poor from developing robust coping strategies, leading to further deprivation. The poor are vulnerable because they face diverse risks and lack the means to protect themselves adequately against them. And once these risks manifest themselves into shocks, the poor either have few assets to dispose off or the depletion of these assets would plunge them into further long-term poverty (Kanbur and Squire 1999). The feeling of defencelessness makes the poor highly risk averse and hesitant to engage in high risk high return activities: while these could lift them out of poverty in a sustainable manner, one slip could plunge them deeper into deprivation.

The extent to which these risks affect well-being depends on what resources households have or are able to acquire; these resources could be political, social, economic etc. As defined earlier, a set of such resources over which a person can exercise ownership rights is referred to as entitlements (Dreze and Sen 1989).

To conclude, exposure to risk created by the environment surrounding the household leads to what Chambers has called external defencelessness. A shock makes this environment fragile, thereby creating uncertainty.

However, as highlighted above, shocks have an additional impact in that they reduce the absolute amount of entitlements available to households, what Chambers would call internal defencelessness. Combining the terminologies of Sen and Chambers, vulnerability is caused when entitlements at the household level are diminished and the environment surrounding the household is such that entitlements cannot be converted into functionings. Households and individuals become exposed to risks when the resources that they can access to reduce vulnerability are not only diminished but also threatened.

The next section applies this conceptualisation of vulnerability to the specific case of post-conflict environments.

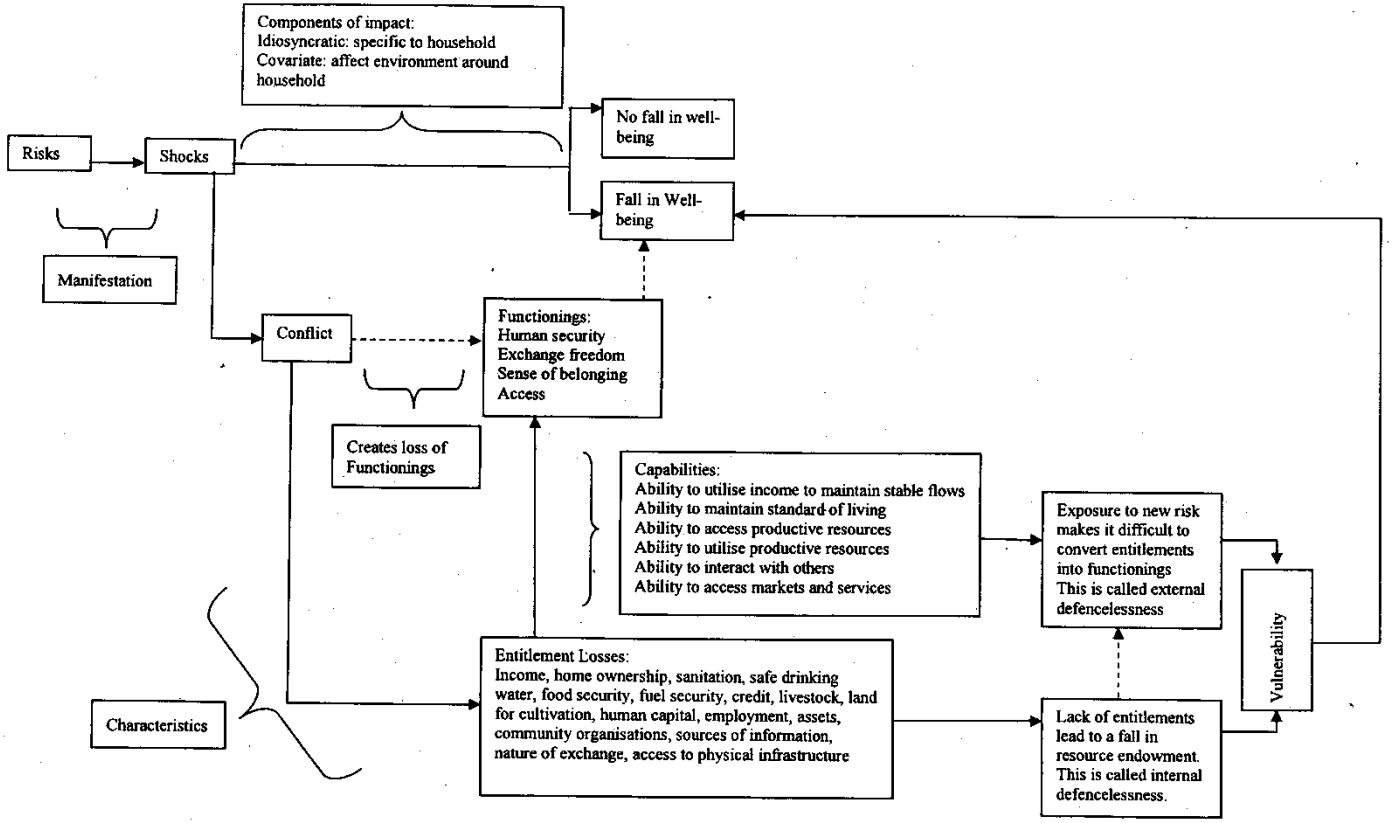
4.4. Conflict and Vulnerability

The previous section develops a framework to conceptualise post-shock vulnerability. This section applies the framework to the specific case of conflict. The occurrence of a conflict increases exposure to risk by changing the structure of entitlements, both privately owned and conferred. Further, it creates new risks that give rise to uncertainties about the future, especially in regard to fragile income flows that increase the likelihood of consumption shock. This situation is accentuated by the fact that conflict reduces the state's ability to help households and individuals in developing more secure sources of livelihood. Fragile income flows are a direct result of the stagnant macroeconomic situation characterised in the immediate post-conflict environment. Social and political conditions are adverse, leading to a reduction in the opportunities available to redress situations of shock. In a nutshell therefore, conflict not only alters the legal rights to resources that influence an individual's well-being but also changes their availability. These characteristics create functioning losses across four broad categories, including: loss of human security, which relates to individual security and well-being over time; loss of space to utilise exchange entitlements; loss of social capital, which erodes a sense of belonging; and, the loss of productive infrastructure that reduces and slows down economic development.

Figure 2 links these concepts diagrammatically to provide an overall framework by which post-conflict vulnerability can be defined and understood. As the diagram shows, risks manifest into shocks. Shocks have varying impact on well-being: for some households, there is high fall in

well-being whereas for others, there is either none or little fall in well-being. The fall in well-being occurs because households become vulnerable. This connection between the occurrence of a shock and vulnerability is a process. Using the specific example of conflict as a shock, this study aims to define vulnerability in terms of entitlements, capabilities and functionings losses. The occurrence of a conflict creates functionings losses, which can be explained by two factors. First is a shortage in entitlements that reduce resource endowments. The second is a breakdown in the process that enables households and individuals to convert their entitlements into functionings. The second factor increases exposure to risks. Together, the fall in entitlements and the heightened exposure to risks creates vulnerability. The aim of this research is to understand these components of vulnerability. In doing so, the research views vulnerability as a process rather than a simple outcome.

Figure 2: Diagrammatic Interpretation of Vulnerability



The shortage in entitlements and breakdown of capabilities contribute towards vulnerability through overlapping conduits. The first impact is that entitlements to which households have access fall. This reduction makes households more exposed to different types of risks that exist in the environment surrounding the household.

To recall, functioning losses are broad and difficult to measure. It is therefore important to categorise them in terms of capabilities and entitlements. This is necessary to identify the root causes of vulnerability and highlight those conduits through which entitlement loss and capability failure influence vulnerability. Through this analysis, it is possible to conceptualise vulnerability as a process rather than simply a phenomenon. Table 2 attempts to identify how losses contribute towards reduced entitlements and how they increase exposure to risk. It shows for each entitlement highlighted in Table 1, whether it is the *lack* of the entitlement at a point in time or its *affect over time* (or both) that leads to vulnerability.

Table 2: Linking Vulnerability to Post-conflict Environments

Entitlements	**Lack of Entitlements**	**Exposure to Risk**
Functioning 1: Human Security		
Income	• Low mean amount • Low availability • Informal sources	• Volatility over time • Low saving possibilities
Ownership of homestead	• Asset value • Type of living arrangements	• Shelter over time determined by condition
Sanitation	• Type of sanitation	• Unsafe drinking water and sanitation facilities create health risks
Clean drinking water	• Source of water	
Food security	• Link with economic conditions	• Ability to meet consumption needs over time
Fuel for heating and cooking	• Cost of fuel	• Reliability of fuel source • Extent of protection against climate
Functioning 2: Exchange Freedom		
Sources of credit	• Access to credit	• Sources of credit

	• Purpose of credit	
Ownership of livestock	• Amount of livestock	• Ability to maintain livestock over time
Ownership of land for cultivation	• Amount • Usage • Asset value • Land management patterns	
Human Capital	• Level of education • Important categories of employment	• Employability over time
Employment in income generating activities	• Who participates	• Under-utilisation of labour
Ownership of tradable assets	• Types of assets • Number of of assets	• Ability to exchange assets
Functioning 3: Social Capital		
Membership in community organisations	• Type of organisation	• Reliability of source of information • Informal risk management
Sources of Information	• Extent of awareness	
Mutual Support/help	• Nature of support given and received	
Functioning 4: Nature of Access		
Physical infrastructure	• Availability	• Access to services and markets • Pattern of utilisation

The first functioning loss that causes vulnerability is human security. Low mean income and few sources that lie mainly in the informal sector reduce household entitlements. The fragility of the external environment makes income volatile over time. In addition, the low mean income reduces saving possibilities. House ownership increases household wealth and the condition of the house determines the quality of shelter over time. The types of sanitation and drinking water at the disposal of households determine the nature of entitlements. Poor sanitation and unsafe drinking water expose households to health risks. Food security determines the extent to which households can meet consumption needs over time. Fuel for cooking

and heating reduces household entitlements when households are required to pay for them. Moreover, when fuel sources are informal, their reliability is not guaranteed.

Second, there is a loss of freedom to exchange entitlements. Not having credit reduces entitlements at a point in time. Besides, if the source of credit is not reliable, uncertainty about the future increases. Ownership of land and livestock is an important determinant of the level of entitlements owned by households, not only for trade purposes but also for producing other entitlements. Low level of human capital results in reduced entitlements at the household level. This impacts upon the type of work that households can access. Unskilled labour usually finds work in the informal sector where possibilities of earnings are not high. The ability to participate in income generating activities may be restricted due to at least two factors: availability of opportunities as well as cultural values. This reduces the possibilities to enhance entitlements at the household level and creates under-utilisation of labour over time. Low level of ownership of tradable assets is a lack of entitlement. Even when households own assets, they may be unable to exchange them. This exacerbates uncertainty.

The third functioning loss, reduced sense of belonging, results from reduced social capital. Social capital is a key determinant of informal risk mitigation and coping strategies. Therefore, social capital is important for risk management over time. Greater social capital at the village level also enhances entitlements at a point in time because it allows households to participate in development initiatives as well as capture economies of scale.

The fourth functioning loss relates to access, which is provided by production and welfare oriented communications infrastructure. This is essential to promote i) growth that expands employment opportunities; ii) access to social services; and, iii) delivery of targeted social schemes for the poor (Bradhan 1995, World Bank 1990, UNDP 1996). It is widely seen to promote integrated rural development and is therefore essential for peacebuilding. Where communities are effectively represented in the identification, construction and maintenance stages of infrastructure creation, provision of rural infrastructure is seen to increase social accessibility (Barrios 2007). Lastly, many studies have shown that infrastructure provision contributes positively towards economic growth.

While not comprehensive, Table 2 endeavours to capture the first round impact of functioning losses. Not being able to attain these functionings, whether due to lower entitlements or ineffective conversion of entitlements into functionings not only perpetuates exposure to risk, but also hinders household efforts towards building reserve entitlements. This inability can persist over time or can be the result of endowments at a point in time that determine the future.

As the literature suggests, the above is one possible approach to conceptualise and measure vulnerability. There are a number of caveats that ought to be kept in mind when practically applying this approach and limitations that can perhaps reduce the strength of the analysis. These are discussed in the next section.

5. Limitations

The use of entitlements, capabilities and functionings to understand post-conflict vulnerability should be treated with caution. First, since there is no universal definition of the key concepts in the manner Sen had initially conceived them, the emphasis is placed on a minimum basic set of functionings. Nevertheless, the key thrust of the approach remains valid in that there is still freedom to choose functionings. An individual is free to determine functionings that are in agreement with his notion of well-being and then utilises entitlements in a manner that enables to achieve this objective. Second, in linking entitlements to vulnerability, the approach emphasises legal possession and command over resources. In post-conflict environments, the collapse of legal systems that ensure possession and command over resource is only one factor that contributes towards vulnerability[19]. This study argues that, in addition, it is the decline in and uncertainty of control and command over exchange entitlements, which leads to vulnerability. This state is crystallised with a collapse in spaces where entitlements could be exchanged. Third, when used in this context, the entitlement approach does not seek to explain the history and evolution of the conflict itself or the politics behind it, rather it provides a framework to analyse manifestation of vulnerability to well-being in post-conflict environments.

[19] This is not to deny the critical importance of legal institutions in post-conflict reconstruction. It is, in fact, one key tool nascent governments of post-conflict environments can use to garner political legitimacy.

Fourth, the impact of war can be divided into three broad clusters (Devereux, 2001). The first covers the disruptive effects of war in terms of reduced exchange entitlements and endowments. The second cluster delves in extra-entitlement transfers that relate to those practices, which are extra-legal and deal with individuals seizing entitlements by force. The third cluster is about those effects that are "…socially engineered to undermine entitlements" (Fine, 1997 pg 627). The entitlement approach is effective only to analyse the effects of the first cluster and remains ineffective in dealing with the challenges raised by the second and third cluster of impacts.

Three key limitations make it difficult to operationalise the framework of vulnerability developed in the previous section. First is the issue of defining thresholds, essential for any poverty assessment. Comparing a situation vis-à-vis a criterion or baseline gives a comprehensive picture of the problem. The second problem relates to the multi-dimensionality of vulnerability. In post-conflict environments, vulnerability is determined by more than just income or consumption loss. It is difficult to measure and analyse these myriad losses in a comprehensive manner. The third inhibiting factor is specific to post-conflict environments and relates to challenges that hinders the assessment of post-conflict needs, post-conflict needs assessment, planning and reconstruction work. Since needs continue to evolve, these change functionings and the causes of vulnerability.

6. Conclusions

This chapter attempts to develop a framework that can be used to measure multi-dimensional vulnerability in post-conflict environments. It defines conflict as a one-off shock that creates four categories of losses. These losses create vulnerability not just by reinforcing poverty but also by creating uncertainty about the future. This link between losses and vulnerability is explored using the ideas of entitlements, capabilities and functionings. The paper argues that losses (functionings), are caused by lack of available resources (entitlements) as well as the inability to utilise (capabilities) these resources. Such an analysis of the link is necessary for a number of reasons. First, it helps clearly identify *how* individuals and communities are exposed and to what. Second, it allows for flexibility when identifying the 'incandum' i.e. the characteristics of interest. This flexibility makes the measurement broader than the approaches discussed above. Third, it is

concise in outlining the nature of policy interventions. Such policy interventions need not focus on rapid response but also sustainable development initiatives. Most importantly, these could include prevention and mitigation strategies as well as ex-post coping strategies.

The research suffers from three key limitations. First, defining thresholds is difficult and arbitrary. Without proper baselines for comparison, it is difficult to make a comprehensive vulnerability assessment. Second, while multi-dimensional analysis is better than using simple consumption and income based measures, the dimensions are determined by individual choice, which makes collation difficult. Also, vulnerability assessments based on multi-dimensional losses are determined for a particular context and cannot readily be compared with other assessments. Third, as post-conflict needs continue to evolve, the structures of control over resources also change and evolve. The approach does not necessarily take this into account.

Given these advantages and disadvantages of the proposed approach, there are three main hypotheses that the subsequent chapters seek to test.

1. Vulnerability in post-conflict environments is multi-dimensional.
2. Vulnerability in post-conflict environments is caused because there is a fall in entitlements
3. Vulnerability in post-conflict environments is caused by a breakdown in capabilities that increase exposure to risk.

The next chapters develop a methodology to measure post-conflict vulnerability that is multidimensional and consists of two components. This methodology will be applied to develop a profile of multidimensional vulnerability to the case of post-conflict Afghanistan using data from the National Risk and Vulnerability Assessment exercise carried out in 2005.

Chapter 3 Measuring Multidimensional Vulnerability in Afghanistan

1. Introduction

Post-conflict environments are characterised by losses that result from the lack of available resources as well as the inability to convert these resources into well-being. In Sen's terminology, manifested losses, which are achieved states of being, are defined as functionings. Available resources that households can control are defined as entitlements. The conversion process whereby entitlements lead to achieved functionings are defined as capabilities. The ability to convert entitlements into functionings is determined by appropriate procedures as well as adequate opportunities, emphasising access as well as the ability to utilise resources. Freedom of choice is integral to this conversion process and is determined by individual values, motivations and dynamics of society around them. Post-conflict environments are commonly characterised by four types of functionings losses[20]. These are human security, exchange entitlements, social capital and access. This study highlights a broad gamut of entitlements that contribute towards the achievement of these functionings.

The advantages of applying the concepts of entitlements, capabilities and functionings to understand vulnerability are three fold. First, breaking down vulnerability in these components highlights the root causes of the phenomenon, highlighting its relation to risks and shocks. Second, it allows for an in-depth analysis on multidimensional losses that cause vulnerability. Third, such a breakdown concretises otherwise vague concepts, making them quantifiable and measureable. Functionings are subjective, they vary across space and may also include intangible aspects of well-being. Linking them to entitlements and capabilities helps identify those causal mechanisms that constitute vulnerability.

Using this context and for the purposes of this chapter, vulnerability is defined as the combination of lack of entitlements and exposure to risks[21]. The occurrence of a shock has varying impact on well-being: for some households, there is little or no fall in well-being whereas for others, there is a high fall in well-being, making households vulnerable. The occurrence of a conflict reduces household functionings, a loss that is caused by not only a

[20] For a detailed literature review, please see Chapter 2.
[21] For a detailed literature review, please see Chapter 2.

fall in entitlements but also a breakdown in the process by which entitlements are converted into functionings. The former, lack of entitlements, leads to internal defencelessness and manifests itself in terms of reduced resilience. The latter, exposure to risk, results from external defencelessness, which manifests itself in terms of heightened fragility.

Many attempts have been made to define multidimensional vulnerability and poverty, partly due to the compelling works of Sen (1981, 1989), Chambers (1989) and Jodha (1988). In addition, data availability has improved in the recent past and it is possible to study a wide range of capabilities, representing both cardinal as well as ordinal data.

This chapter seeks to develop a methodology towards measuring multidimensional vulnerability in post-conflict environments. In doing so, the chapter makes multiple contributions to existing literature on measurement of vulnerability. First, the chapter analyses existing attempts at measuring vulnerability, briefly highlighting the advantages and disadvantages of current approaches being used. Second, using this literature review as well as the knowledge of post-conflict environments, the chapter identifies indicators that can be used to measure the different components of vulnerability. Using these indicators, the chapter develops a profile of uni-dimensional deprivation in Afghanistan. In doing so the chapter outlines a context in which multidimensional vulnerability can be measured and analysed. This analysis will be presented in the next chapter.

The chapter is structured as follows. Section 2 summarises the existing literature on measuring vulnerability. Section 3 identifies the methodology that is used to measure multidimensional vulnerability. The fourth section briefly describes the data used to measure vulnerability. Section 5 presents general trends of uni-dimensional deprivation in Afghanistan. Section 6 concludes.

2. Putting Theory to Practice

Measuring vulnerability is a complex and challenging task. There are many different approaches towards defining and conceptualising vulnerability, which not only differ in terminology but also in the methods applied towards measurement.

Current efforts to measure vulnerability tend to be ex-ante, emphasising disaster risk reduction[22] and not ex-post management of risk and vulnerability. Ex-ante measures can be grouped around three initiatives. These include the Disaster Risk Index (DRI), the Hotspots project and the Americas project. The DRI (espoused by Peduzzi 2006) aims to identify human exposure to hazard types by calculating relative vulnerability. Relative vulnerability is calculated by dividing the number of people killed by the number of people exposed. This is a simple approach but does not explain why different countries have differing levels of vulnerability. To this end, the DRI also includes information on socio-economic variables that explain how context-specific development influences disaster risk and vulnerability. By combining relative vulnerability and socio-economic vulnerability, the DRI explains vulnerability through human exposure to hazard types.

The DRI focuses on simple measures such as calculating loss of life. This type of approach is more relevant for a damage assessment but not for a vulnerability or impact assessment. It does not allow for an understanding of the dynamic nature of vulnerability. Nor does it capture the iterations that occur as the shock unfolds.

In order to measure ex-post vulnerability, it is important to break it down into the components of the risk chain: the likelihood of risky events, the options for managing risk or the risk responses and the outcome in terms of welfare losses. Such decomposition shows that vulnerability is caused by exposure to risk that creates uncertainty. Households and individuals are vulnerable to suffering an undesirable outcome and how they respond to these outcomes influences their level of well-being. This could lead to a possible downward shift in well-being. The extent of "downwardness" is determined by the level of resilience households and individuals possess. Existing vulnerability studies do not undertake this kind of decomposition of the risk chain.

Profiling vulnerability is beset with two key problems. First, different models/organisations approach the issue of measurement in order to achieve their own specific objectives and targets. This not only makes replication difficult but also excludes the needs of the vulnerable

[22] Details of the key approaches and indicators used in this field may be found in Annex A.

populations. Second, as mentioned above, vulnerability is often substituted by poverty. In the absence of quality data, it is easier to measure poverty and use these measures as a proxy for vulnerability. Moreover, as Hejimans (2001) points out, it is mostly the poor who suffer from vulnerability but most strategies that seek to address it do not include the perceptions of people towards risks and shocks. Such strategies tend to think on behalf of the vulnerable poor without realising that their perceptions of vulnerability may differ.

As a starting point therefore, it is important to capture poverty at a *point in time* to assess household resilience against shocks. The practical usefulness is determined by the nature of poverty measures that are used. While there is no consensus on which measure is better than the other, there is consensus over the fact that different measures can be used in different situations to better represent poverty (Bedi et al (2007)). In the framework proposed by this research, poverty at a point in time is captured by the level of entitlements possessed by households at a point in time.

Existing vulnerability assessments, particularly those undertaken by the World Bank, end up capturing poverty at a point in time using uni-dimensional measures such as income or consumption. Such measures are a good indicator for poverty because they provide a way to capture income from different sources. In the recent past, many analysts (Sen 1981, Dreze and Sen 1991, Vogel and O'Brien 2004) have argued that money-metric indicators of poverty such as income and consumption do not capture the multi-dimensional aspects of poverty such as access to all those entitlements that are the basic minimum required to maintain a standard of well-being. Measuring poverty in this way implies sketching a picture of household well-being based on multiple indicators, which are then aggregated into a numerical scale (Cappellari and Jenkins 2006). These are binary indicators that reflect household access to various services. This approach was introduced by Townsend (1979) and was developed by many including Gordon et al (2000) and Roelen et al (2009).

Compilation of indices that capture the multifaceted loss of entitlements characteristic of post-conflict environments is a daunting task. One key problem results from the nature of indicators used to compile such indices. Data that is collected particularly in the immediate aftermath of the conflict is not only scarce but also sketchy. Not only are comprehensive entitlements

difficult to define and measure it is also difficult to define a notion of well-being that individuals and households seek to maintain. While this is a valid and relevant critique, particularly if the research on this topic has to be broadened, Sen (1984) (and with Jean Dreze (1989)) acknowledges that the entitlements required to achieve well-being can be extensive or limited (Dreze and Sen 1989). They can be elementary such as food security to more sophisticated, such as being part of social networks (Dreze and Sen 1989). Moreover, even-though there is no universal agreement on what acceptable capabilities should constitute, there is wide agreement that being well-nourished, adequately clothed, sheltered, having access to clean drinking water, health and education, form the necessary minimum (Kakwani 2006). While this minimalist manner of defining entitlements in terms of income and consumption may not be the way Sen had intended the approach to be used, it provides a framework to operationalise the notion of poverty and gain a sense about the prevalent conditions of vulnerability.

Even when multidimensional entitlement losses are acknowledged and recognised, the nature of post-conflict environments increases fragility and uncertainty over time. These challenges make it difficult for households to convert their entitlements into functionings. In the framework of vulnerability proposed by this study, this uncertainty is captured by heightened exposure to risk. Such challenges hinder reconstruction and recovery efforts, specifically in terms of planning. Lack of administrative capacity makes needs assessment logistically difficult (Bodewig 2002, Cliffe et al 2003). Reliance on external implementing partners (international and non-governmental organisations) is high and this is not coupled with a workable exit strategy for them. Where conflicts have been the result of or have been exacerbated by ethnic tensions, such cleavages may hamper relief and reconstruction efforts. Moreover, lack of transparency in aid allocation can lead to a re-emergence of conflict. Cliffe et al (2003) find that scarcity of resources implies certain reconstruction activities will not be implemented, which may lead to further tensions. They also find that post-conflict environments are usually characterised by a breakdown of institutions normally used to prevent localised conflicts from re-igniting. Further, informal economic activities are usually rampant and are not easy to reign in, making it difficult for the government (usually newly instated) to establish control (McKechnie 2003).

While there is no one way to define or measure vulnerability, Birkmann (2006) and Wisner (2003) highlight three main cautions that are necessary when measuring vulnerability. First, when developing mechanisms of measurement, it is important to ensure that they are relevant for the context; one-size-fits-all measurements may not reflect the idiosyncrasies of a particular situation. Where possible, a balance should be struck between various approaches. Second, when measuring vulnerability, its association with other variables should be clearly established so that the root causes on the one hand and impact on the other can be elaborated. Third, methods of vulnerability measurement should be realistic and in line with the capacity to use them in empirical research.

Recognising these constraints, it is possible to identify various indicators based on which patterns of deprivation can be discerned. Such an exercise would help translate a theoretical definition of vulnerability into a measureable concept. However, before the chapter shifts towards the measurement of vulnerability, the next section briefly outlines the methodology used for analysis.

3. Methodology

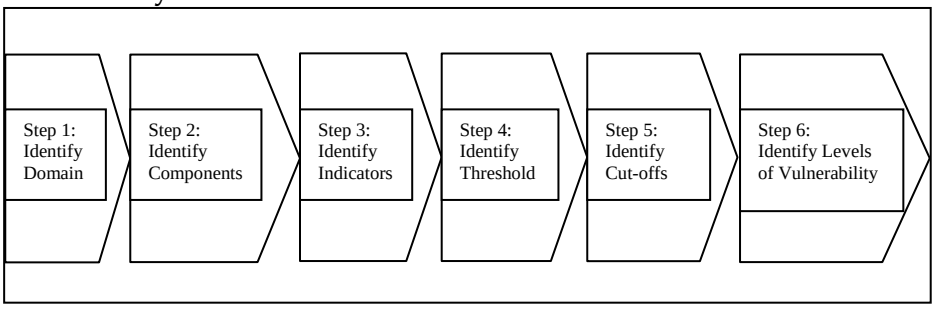
The conceptual underpinnings for this chapter are based on the approach presented by Chakravarty and Bourguignon (2003) for the measurement of multidimensional poverty[23]. The approach argues that while there is a recognition of poverty being multidimensional (resulting from losses across more than one indicator) rather than a mere loss of income or consumption, identifying these dimensions is not sufficient. It is equally important to include these dimensions into a workable definition of poverty. The existing attempts to do this focus on aggregating various dimensions into a single index based on arbitrary functions and formulating poverty lines and measures based on this index. Chakravarty and Bourguignon argue that while these efforts are more elaborate on the theoretical side, when it comes to measurement, these measures essentially remain uni-dimensional. As a way to address this limitation, they propose the use of multiple dimensions, each of which has a specific poverty line and to examine the interplay of these dimensions.

[23] Many attempts have subsequently been made to apply this approach including Gordon et al (2003), Roelen et al (2008, 2009)

The analysis presented in this chapter is distinct from other vulnerability assessments. It views vulnerability as the combination of two components: exposure to risk that results from external defencelessness; and, lack of entitlements that results from internal defencelessness. Vulnerability results when households are unable to convert their resources into achieved states of well-being. It is therefore necessary to include indicators that capture the exposure to risk as well as lack of entitlements aspects of vulnerability.

Figure 1 provides a summary of how the multidimensional approach is applied to the measurement of post-conflict vulnerability.

Figure 1: Steps to Operationalise Measurement of Multidimensional Vulnerability



Having established the relevance of the approach towards measuring multidimensional vulnerability, a number of steps have to be taken to operationalise it. First, the domains of functionings losses that cause vulnerability have to be identified. Based on the characteristics of post-conflict environments, vulnerability is caused by deprivation across four key domains. These include human security, exchange freedom, social capital and access.

A second step, *specific to the measurement of vulnerability*, is the identification of components. Vulnerability has two main components: lack of entitlements as well as exposure to risk. The former reduces resilience over time while the latter makes it difficult for households to convert their resources into well-being. For each domain therefore, it is necessary to identify indicators that measure the 'lack of entitlements' aspect of vulnerability and the 'exposure to risk' aspect of vulnerability. Establishment of components based on this criterion is critical because it is

this differentiation that distinguishes vulnerability measurement from poverty measurement.

Step three includes the identification of indicators that are used to measure each component of vulnerability within each domain. From the outset, it should be acknowledged that identifying multidimensional deprivation, whether for poverty assessments or vulnerability assessments, is largely arbitrary. This issue is summarised by the question raised by Kakwani (2006): how many indicators are enough? Is it preferable to analyse a universal list of indicators (Nussbaum 1992) or make the analysis more context-specific (Sen 1976, 1989)? In order to compile a comprehensive list of indicators that addresses this arbitrariness, this research relies on a review of secondary literature (on the general concept of well-being as well as the specific nature of well-being in post-conflict environments). The final choice is based on how accurately and reliably they reflect the conceptual framework and goals of research (McLaren 1996). Consequently, the chosen indicators have a number of features. They are relevant for measuring both components of vulnerability. Identifying the right scope of the chosen indicators is crucial for measuring post-conflict vulnerability. Vulnerability is a dynamic concept which merits measurement over time. However, in post-conflict environments where data is scarce, such inter-temporal analysis is not possible. In the immediate aftermath of conflict when policies should be efficiently and effectively guided, perhaps an inter-temporal approach is not ideally suited for two main reasons. First, time series data is usually not available since collection of such data is difficult. Second, the emergency nature of needs requires quick action and policy makers are not able to wait for time series data to be collected. Rather, it is more important to measure multidimensional vulnerability using cross-sectional data so that appropriate policies can be designed that are efficient in addressing multiple deprivations in the immediate aftermath of the conflict. Another important characteristic of the indicators is that they are interpretable, not just to draw conclusions about vulnerability but also help guide conclusions about policy interventions. This relates to another aspect of indicators: the unit of analysis. It is important to acknowledge that even-though poverty and vulnerability assessments are based on the individual level the results presented in this chapter are for the household levels. Since vulnerability measurements are based on entitlements that are owned at the household level, there is scope for economies of scale. Measurement at the household level allows the research to reflect this scope. Table 1 summarises the list of

indicators chosen for each component within each domain. The table also summarises the literature that is used to identify the indicators as well as thresholds for vulnerability.

Two additional factors determine the choice of indicators. First, those indicators for which either a large majority or too few face deprivation, are excluded. This implies that all households for which vulnerability rates are above 80 percent and below 10 percent are excluded[24]. Second, those indicators that are applicable for only a sub-section of the population are also excluded. Examples include benefit derived from land. Since this is relevant only for those households that have access to land, using it for measurement of multidimensional vulnerability will make comparison difficult. It should be emphasised that indicators within each domain are not weighted because they are considered equally important in terms of their contributions towards vulnerability. This assumption is made because stated preferences are not available. Nevertheless, by not explicitly weighting indicators, there is implicit weighting in that each indicator is weighted equally.

Once the indicators are identified, step four tackles the issue of thresholds used to define the vulnerable households. When measuring multidimensional vulnerability, thresholds, like the indicators, are both subjective and objective. For majority of the indicators used in this study, thresholds are derived from the literature that is used to identify indicators and consequently reflect absolute levels of deprivation. For some indicators however, the literature does not provide context specific thresholds that are effective and relevant to the context of Afghanistan. For these indicators, relative thresholds are defined, which are derived from the data. A detailed list of thresholds used in this study is provided in Table 1.

Step 5 involves identifying cut-offs but before doing this it is important to establish their relevance. Cut-offs are distinct from thresholds. While thresholds determine, for each indicator, the level below which a household is considered vulnerable, cut-offs determine the number of indicators in which a household is vulnerable to be classified as experiencing multidimensional vulnerability. So far the methodology has identified the three essential constituents of vulnerability: domains, components and

[24] The lower bound of the range is set at 10 and not 20 percent to ensure the inclusion of all four indicators measuring social capital.

indicators that measure each component. Cut-offs combine these three by stipulating the number of indicators within each domain in which a household has to be deprived in order to be classified as experiencing multidimensional vulnerability. In this way, cut-offs allow for multiple layers of vulnerability to be established. The first layer consists of levels within domains and the second consists of levels 'aggregated' across domains. The second layer builds on the first layer in that for a particular household, overall inter-domain vulnerability is determined by the outcome of intra-domain vulnerability. Measuring multidimensional vulnerability based on this approach of within and across domains borrows from the dual cut-off approach proposed by Alkire and Foster (2007)[25]. It is distinct from other aggregation methods such as the union and intersection approaches proposed by Atkinson (2003). The former postulates that a household is vulnerable if it falls below a threshold in at least one indicator in a given domain. This approach is relevant when vulnerability can be defined as deprivation in a single domain. However, there is a risk that vulnerability is caused by more than one indicator. The intersection approach argues for the inclusion of all indicators: a household is vulnerable if deprived across all domains. The risk here is to be 'too' inclusive. By allowing the researcher to identify those indicators that cause vulnerability within a domain as well as those domains that contribute more towards overall vulnerability, the dual cut-off approach combines the virtues of both the union and intersection approaches.

When applying the dual cut-off approach to the present analysis, rates of intra-domain vulnerability are calculated for four levels (not vulnerable, less vulnerable, vulnerable and very vulnerable) within each domain. Aggregating across the four domains to calculate inter-domain vulnerability requires all possible combinations of levels and domains to be considered. What this implies is that households that suffer severe deprivation in one domain are being compared to households that suffer less deprivation but across multiple domains. In order to address this problem when calculating inter-domain vulnerability, each household is assigned a rank, ranging between 0 and 10. This rank represents all those combinations that result from aggregating four levels across four domains. The calculation and assignment of these ranks is described in more detail in Section 6.3.

[25] The approach has been used to measure multidimensional child poverty in Vietnam by Roelen et al (2009) and multidimensional poverty in Congo by Notten (2008).

Step six involves establishing levels of vulnerability. For the intra-domain (within domain) analysis, a household is defined as less vulnerable if it suffers deprivation in two indicators, vulnerable if the household suffers deprivation across three indicators and very vulnerable if deprivation is experienced across four or more indicators. For the inter-domain (across domain) analysis, as mentioned above, households are assigned ranks. A household is defined as less vulnerable if it receives a rank of between 1 and 3, vulnerable if the rank falls between 4 and 7 and very vulnerable if it receives an overall rank ranging between 8 and 10.

From the outset, it is necessary to acknowledge that the domains are unbalanced as the number of indicators within each domain is not the same. Deprivation in the domain of human security is measured by five indicators whereas exchange freedom is measured by nine, social capital by four and access by two. Because of this imbalance, it appears that the domain of exchange freedom is over-emphasised compared to the other domains[26]. The loss of exchange freedom is defined by loss of productive, trade-based and labour entitlements. Such a definition makes this domain much broader than the others. This imbalance also has implications when identifying intra-domain levels. The domains of human security, exchange freedom and social capital each have at least four indicators. The domain of access has only two indicators and consequently only two levels of vulnerability: not vulnerable and less vulnerable. Ideally, it would be preferable to have a greater number of indicators to measure deprivation in the domain of access, particularly access to health and markets. However, data for these indicators is not available in the NRVA (2005) dataset. To address this constraint, a separate case-study analysis is presented in subsequent chapters based on survey data collected in ten villages across five provinces in Afghanistan.

[26] For details, please see Chapter 2.

Table 1: Indicators used to Measure Vulnerability - Domains/functionings-wise and Component-wise breakdown

Indicator	Description of Indicator	Threshold for Vulnerability	Literature
Functioning 1: Human Security			
Indictors for Lack of Entitlements			
Average annual income per capita	Average annual household income per capita	Annual income per capita less than US$ 456.25 based on PPP exchange rate: US$ 1= Afs 20.50	WDR 1990, Chen and Sangraula (2008)
Number of income sources	Measures diversity of income	Household income derived from less than two sources	Morduch and Sharma (2001), Vatsa (2004), Dercon (2000)
Frequency of problems satisfying food needs	Sometimes measures problems satisfying food needs up to six times a year Often measures problems satisfying food needs frequently during a month	Sometimes and often	Human Development Report/Human Development Index
Access to shelter	Measures whether household has a dwelling or not	No access to dwelling	Moser (1998)
Indicators for Exposure to Risk			
Average frequency of income received	Measures the number of months income from the main source is received throughout the year	Income received for less than eight months	Morduch (1995), Morduch (1999)
Condition of house	Good quality includes all windows doors and non-leaking roof condition, temporary structures (good) and incomplete structures. Poor structures include leaking roof, open windows, doors or walls, traditional tents, relief tents and temporary structure (bad)	Poor condition of housing	Moser (1998)
Inability to make payments for housing	Measures outstanding debt that has accrued due to the acquisition of housing	Yes	Moser (1998)
Type of sanitation	Households with no toilet facilities use open fields and bushes. Unsafe toilet facilities include open area in compound but not pit, open pit and traditional covered latrines. Safe toilet facilities include improved and flush latrines.	Access to no or unsafe toilet facilities	Doyal and Gough (1991). The distinction between safe and unsafe water and sanitation has been compiled for this research based on WHO guidelines on water quality and sanitation and hygiene promotion (2005, 2009).
Source of water	Unsafe water includes shallow open wells (public), shallow open wells (in compound), public hand pumps, hand pumps located in compounds, unprotected spring, arhad, kariz, rivers, lakes, canals, kanada, nawar, dand dam, pool/hawz and drainage. Safe water includes bored wells (hand pump), bored wells (motorised), protected springs, piped schemes (gravity), piped schemes (motorised), piped water (municipal) and bowser/water tanker	Access to unsafe drinking water	
Reliability of source of fuel	Formal fuel includes electric heater, gas heater, charcoal and kerosene heater. Informal sources of fuel include firewood, stoves, burning straw and ping or manure	Informal	Human Development Report/Human Development Index
Functioning 2: Exchange Freedom			
Indicators to Measure Lack of Entitlements			
Proof of ownership	Measures whether households have registered deeds proving ownership of dwelling. Deeds can be registered in a court, in local official records or elsewhere	Households that have no proof of ownership of dwelling	Moser (1998)
Access to credit	Measures whether households have access to financial capital or not	No access to credit	Dercon (2000), Shoji (2008)
Access to Land	Measures whether households have access to productive land or not	No access to land	Moser (1998)
Educational attainment of household head	Measures the maximum education attained by household head	Household head has none or primary education	Human Development Report MDG Requirement
Reading ability	Measures the number household members who can read as a percentage of household members over six years of age	No member within household has reading abilities	Human Development Report
Number of people available to work	Measures the number of able bodied household members between 12 and 55 years of age. The threshold for this indicator is relative for Afghanistan, derived from the data itself	Less than 47 percent members per household. The number 47 is the median of the indicator and it better represents the total population.	Shoji (2008), Vatsa (2004)
Type of assets owned by household	This indicator measures those assets that do not generate trade potential. Household assets include watch, carpets, rugs, radios, televisions, video cassette recorders and generators. Income generating assets include sewing machines, rug weaving looms,	These are household assets.	Moser (1997), Woolard and Klasen (2005)

	carpentry equipment, hand carts, tractors, combine threshers and ploughs. Personal transport assets include bicycles, motorcycles and cars. Communication assets include computers, internet, telephones, cell phones and satellite phones.		
Access to livestock	Measures whether household has access to livestock or not	No	Moser (1998)
Indicators to Measure Exposure to Risk			
Source of credit	Informal sources include family/friends in Afghanistan, family/friends outside Afghanistan, shopkeepers/traders, local land owners and opium traders. Money lenders refer to the Hawala systems. Formal sources of credit are microfinance institutions and banks and mortgaged credit is accessed through the mortgage of land or dwelling	Source of credit includes informal, money lender or mortgaged capital	Shoji (2008)
Purpose of credit	Investment expenditure includes agricultural inputs, opium cultivation, construction other than house, business investment, land purchase, house purchase, or construction/home improvement. Consumption expenditures include emergency and informal expenditures. Emergency expenditures include food purchases and health emergencies. Informal expenditures include payment of bride price, weddings, funeral expenses or other uses	Credit is used for emergency or informal expenditures	
Number of children enrolled in and regularly attending primary school	Counts the number of children between the ages of 6 and 11 within a household that are enrolled in primary education	Households with no children enrolled	MDG
Number of able-bodied household members employed	Measures a dependency ratio: the number of able bodied household members between the ages of 12 and 55 engaged in income generating activities as a percentage of total household members between the ages of 12 and 55. The threshold for this indicator is relative for Afghanistan, derived from the data itself	Employed labour at household level is less than 50 percent. This represents the mean of able-bodied household members as a percentage of total available labour at household level. In this case the mean is chosen for the threshold because it better represents the situation in Afghanistan.	Vatsa (2004)
Functioning 3: Social Capital			
Indicators to Measure Lack of Entitlements			
Membership in community organisations	Measures the extent of social capital in local communities through membership in village-level organisations, including shura and CDCs	Household has membership in no community organisation	Morduch and Sharma (2001), Narayan et al (2000).
Access to social networks	Measures whether or not a household receives help from other community members, family, friends, or any platform	No help received from fellow community members	Morduch (1995), Morduch (1999)
Indicators to Measure Exposure to Risk			
Main source of information	Informal sources of information include relatives, friends, neighbours, community bulletin board, local market, mullahs, groups or associations, business or work associates, political associates and community leaders. Formal sources include local newspaper, national newspaper, representative of the government, NGO, internet, radio and television	None or informal sources of information	Max-Neef (1989)
Frequency of help received through informal arrangements	Measures how often households receive support through informal sources or other community members	No support received throughout the year.	Max-Neef (1989)
Functioning 4: Access			
Indicators to Measure Lack of Entitlements			
Availability of physical infrastructure	Measures the type of infrastructure used to approach dwelling, including footpath, unpaved roads and paved roads	Dwelling accessed only by footpath	Bradhan (1995)
Indicators to Measure Exposure to Risk			
Access to education	Measures those households, where children are unable to enrol in schools because they are unable to access educational institutes	Distance to school is too long	Human Development Index

The methodology outlined above provides scope for a rich and exhaustive analysis on profiling vulnerability. First, it is possible to use the indicators defined above to analyse patterns of uni-dimensional deprivation, which help determine the process by which the impact of war translates into vulnerability. Second, the methodology helps calculate intra-domain vulnerability to identify which of the indicators within each domain cause/contribute more towards vulnerability. Third, the methodology compiles an index of overall inter-domain vulnerability, which presents levels of vulnerability. A household is defined as less vulnerable if it experiences deprivation across two indicators, vulnerable if it experiences deprivation across three and very vulnerable if it is subjected to deprivation across four or more indicators. Fourth, the methodology allows for component-wise analysis, which identifies whether it is exposure to risk that contributes more towards vulnerability or the lack of entitlements. Intra and inter-domain and component-wise analysis of vulnerability will be presented in the next chapter.

4. Data

The data being used for this exercise comes from the National Risk and Vulnerability Assessment (NRVA) exercise conducted across Afghanistan in 2005. The NRVA has been borne out of the World Food Programme's (WFP) Vulnerability Assessment and Mapping (VAM) exercise. The sample consists of 30,822 households with 227,070 individuals. A summary of the evolution of NRVA can be found in Annex B[27].

While the NRVA provides comprehensive information for households in Afghanistan, there are a number of limitations of the dataset. First, no census information was available when the data was collected. Nevertheless, the survey is as statistically representative as possible because population information for communities was gathered by district leaders and community heads. Second, with the emergence of unofficial districts, sampling becomes more difficult. This problem is compounded by the fact that usually the actual boundary does not correspond to the definitions maintained with the central administration. Third, because there are a

[27] For details on the 2005 Assessment and sampling, please refer to Ministry of Rural Rehabilitation and Development and the Central Statistics Office, Kabul Afghanistan (2007). "The National Risk and Vulnerability Assessment 2005: Afghanistan".

number of stakeholders involved in the formulation of NRVA, the result is a mixed needs assessment methodology, which collects information on a number of sectors without explicitly emphasising any particular area of research. This is particularly true because there is a concern that the interests of all stakeholders may not be represented effectively and the resultant needs articulation by the respondents may not provide much information. On the other hand, this multi-stakeholder approach ensures that the final dataset is rich in information and provides comprehensive information for Afghan households. Fourth, despite all the efforts made to solicit information from women, in the more conservative areas, accessing women for interviews was difficult. It is noteworthy though that female representation in the 2005 dataset is higher than the data collected in 2003. Fifth, given the regional diversity amongst communities, it is possible that for some districts, indicators are not verifiable and therefore, when information is scaled up, it may not be representative. Sixth and most importantly, for a number of indicators, the data is based on recall and is susceptible to inaccuracies. In the analysis presented below, such inaccuracies have been addressed to the extent possible through data triangulation.

Before analysing the indicator-wise results or those on multidimensional vulnerability, it is useful to present a demographic profile for Afghanistan, which helps contextualise the discussion in subsequent sections.

4.1. Demographic Profile

Table 2: Demographic Data[28]

By Location	
Kuchi	5.74
Rural	76.55
Urban	17.72
By Demographics	
Sex	
Women	45.80
Men	54.20
Age	
0 to 6	15.77
6 to 11	19.54
11 to 21	26.12
21 to 30	13.75
30 to 50	18.23
50 +	6.58
Household Size	
1 to 5	14.37
6 to 8	43.60
9 to 11	27.61
12 +	14.42
Education of Household Head	
None	59.88
Primary	11.80
Secondary	8.47
High School	13.39
University/College	5.60
Post Graduate	0.86
By Income Generating Activities	
Agriculture	28.47
Livestock	9.67
Formal Employment	13.17
Income from Opium	2.28
Small Business	17.24
Agricultural Wage Labour	4.50
Other Wage Labour	17.07
Remittances	3.98
Other	3.62

Source: Author's own calculation using NRVA (2005)

[28] Since the data presented in Table 2 is for Afghanistan as a whole and is not representing household dynamics, it is weighted using population weights and not household weights.

Males comprise 54 percent of Afghan population while females comprise 46 percent. Such a large difference within the male and female population is not common and the causes for such a large difference should be explored. From the outset, one possible reason could be used to explain such differences is that many household heads (to which the questionnaires have been administered) do not consider it appropriate to report on the female members of their household. Consequently, the data on female populations may be under-reported. As expected, the Afghan population is very young, with a significant proportion of children up to 13 years old. Almost 75 percent of the population is less than 30 years of age. One possible reason to explain this, particularly for post-conflict environments, is that many within the older age groups were killed or migrated during the war[29].

Most Afghans live in large households with average size around seven members. Level of education in Afghanistan is very low, with almost 60 percent of households being uneducated. Almost 70 percent of households rely on informal sources of income. A total of 81 percent of Afghans live in rural areas, 14 percent of Afghans live in urban areas while 5 percent are kuchi (nomads). Kuchi populations represent the nomads and account for almost 6 percent of the total population. The main source of income for kuchi households is livestock, primarily sheep and their average holdings of livestock are larger than settled populations (rural and urban). Because of their nomadic lifestyles, they do not tend to *own* land or dwellings; over 70 percent of the kuchi live in tents.

5. Results[30]

This section highlights key patterns of deprivation that create multidimensional vulnerability in Afghanistan. Table 3 summarises deprivation rates for indicators that measure vulnerability. As the table shows, both indicators that measure lack of entitlements, as well as, exposure to risk contribute towards vulnerability. The subsequent sections investigate the results for each functioning further.

[29] A number of authors have addressed the issue of 'missing women' including Sen (1990, 2003), Klasen (1994) and Klasen and Wink (2003) although not specifically for Afghanistan.

[30] All numbers presented here are weighted using household weights.

Table 3: Indicators for Measurement (% households)

Indicator	Kuchi	Rural	Urban	Total
Functioning 1: Human Security				
Indicators to Measure Lack of Entitlements				
Average annual per capita income below US$ 456.25	55.91	60.95	38.15	56.37
Income derived from less than two activities	50.26	43.44	70.39	48.90
Problems satisfying food needs more than six times a year	66.74	71.48	43.83	66.00
No access to shelter	3.29	3.57	6.27	4.06
Indicators to Measure Exposure to Risk				
Income received less than eight months in the year	24.90	47.26	8.81	38.76
Poor condition of dwelling	82.54	45.02	30.76	44.44
Debt accrued due to purchase of housing	1.96	8.77	9.12	8.46
Unsafe source of sanitation	96.71	94.69	72.03	90.53
Unsafe source of drinking water	89.97	91.69	76.54	88.74
Un-reliability of fuel	97.12	95.70	56.52	88.39
Functioning 2: Exchange Freedom				
Indicators to Measure Lack of Entitlements				
No proof of ownership	38.44	51.41	11.95	43.24
No access to credit	71.64	57.39	72.30	61.01
No access to land	87.90	43.14	92.60	54.98
Education level of household head up to or below primary	97.18	87.41	56.72	82.18
No reading ability within household	85.13	43.18	17.32	40.67
Less than 47 % members available for employment at household level	49.97	47.10	42.40	46.47
Only household assets owned	54.18	29.33	12.03	27.47
No access to livestock	10.61	27.47	86.43	37.63
Indicators to Measure Exposure to Risk				
Access only to informal sources of credit	82.02	85.97	80.51	84.72
Credit used only for consumption purposes	23.29	32.81	16.25	29.15
Percentage of children not attending school	94.12	73.63	71.23	74.33
Percentage of employable household members below 49.72 percent	31.87	36.24	52.95	39.14
Functioning 3: Social Capital				
Indicators to Measure Lack of Entitlements				
No membership in any community organisations	77.81	75.92	87.97	78.29
No help received through social networks	20.63	14.34	28.34	17.33
Indicators to Measure Exposure to Risk				
Access to none or informal sources of information	73.49	63.54	46.81	60.95
No support received through informal arrangements throughout the year	22.94	17.86	25.29	19.54
Functioning 4: Access				
Indicators to Measure Lack of Entitlements				
Poor availabiilty of physical infrastructure	52.16	51.85	24.93	46.79
Indicators to Measure Exposure to Risk				
Access to education denied as distance of school from homestead high	76.02	57.28	12.33	49.86

Source: Author's own calculation using NRVA (2005)

5.1. Deprivation Across Strata

Table 3 shows the incidence of deprivation for the three main population strata in Afghanistan. For each of the indicators, relative to the urban populations, the kuchi and rural households are more deprived. Except for the domain of human security, the kuchi are worse off when compared to the urban and rural populations.

Some general observations can be made using the data in Table 3. Urban households have the relatively more stable incomes compared to rural and kuchi households; 33 percent derive income from formal employment and 36 percent from small businesses. Nevertheless, this does not mean they have high incomes as 38 percent of the households live below the poverty line. The condition of housing for urban households is better than rural households perhaps because urban households have purchased housing and consequently accrued more debt than the other populations. The quality of water, sanitation and fuel is slightly better for urban households but not significantly better as the majority of urban households also suffer from deprivation in these dimensions.

The incidence of deprivation in the domain of exchange freedom is highest. For most indicators, urban households are better-off compared to rural and kuchi households. Deprivation in a number of indicators is related to lifestyle choices. For example, kuchi and urban households do not have access to land because they are not engaged in farming. Likewise, access to livestock is highest for kuchi households who derive their income from livestock activities. Kuchi populations also do not own significantly high amounts of assets because of their nomadic lifestyle. Comparatively, urban households have lower access to livestock. The level of education is very low in all Afghanistan. However, low level of education is a severe problem for kuchi households, followed by rural and subsequently urban households for all three indicators related to education. For all three indicators, kuchi populations experience deprivation rates of over 80 percent. The most striking is the percentage of children not attending school; for all three strata, in over 70 percent of the households, children of school going age are not enrolled. For kuchi populations this percentage is 94 percent. This low enrolment rate can be explained by the unavailability

of schools: 76 percent of kuchi households do not have access to schools. Availability of credit is poor for all strata of the population but particularly severe for the urban populations. Unlike rural and kuchi populations though, urban populations use credit for investment expenditures such as for business and home improvement.

For the domain of social capital, rural and kuchi households appear better off. Community affiliations appear to be strongest in rural areas; compared to urban households, more rural and kuchi are represented in community organisations. In terms of support received, rural households receive support from other community members more frequently than urban and kuchi households. In only one indicator, sources of information, urban households are better off: by virtue of being located in cities, they have access to more formal information.

The domain of access consists of only two indicators so a comprehensive analysis is not possible[31]. It is, nevertheless, possible to conclude that kuchi and rural populations have much lower availability of access than urban households. However, availability of access is not the only problem. Availability of services in rural parts of Afghanistan is poor: markets are fragmented, provision of health services is low and primarily undertaken by health centres and clinics, which are poorly stocked and staffed and schools are unavailable.

These patterns for the stratified population of Afghanistan reveal that comprehensive development in the rural parts of Afghanistan is low. Kuchi and rural households have low levels of entitlements, which reduces their resilience against shocks. Also, the environment surrounding these households is fragile and does not enable them to convert their entitlements into functionings. Kuchi and rural households are therefore particularly vulnerable.

5.2. Human Security

According to UNDP's Human Development Report, human security hinges upon economic, food, health, environment, personal, community and

[31] A separate case-study analysis of mobility, access and infrastructure utilisation in Afghanistan will be presented in subsequent chapters using survey data from five provinces across Afghanistan.

political security. In linking human security to the concept of vulnerability, it is important to elucidate that the concept of human security relates to the ability of a household to maintain a standard of living over time. Therefore, this research emphasises basic components of human security such as availability and amount of income earned by the household, availability and type of shelter and availability and type of water, sanitation facilities and fuel.

Prolonged conflict over more than thirty years has left the condition of human security severely crippled in Afghanistan. Majority of Afghans rely on agricultural activities or informal labour for income generation. The potential and scope of formal income generating activities is restricted because of poor infrastructure and economic opportunities (Table 3). This implies over half of Afghan households live below the international poverty line of US$ 1.25 per day and approximately half Afghan households receive income from less than one source. Income generation is not diversified and in the event of unforeseen shocks, if one income source is destabilised, these households have no recourse to protect livelihoods. Moreover, approximately 40 percent of households receive their income for less than eight months in the year – this particularly for activities related to agriculture (33 percent of total households rely on such activities). The low amount of income combined with insufficient possibilities to save makes it difficult for households to smooth consumption throughout the year[32].

A significant proportion of households face difficulties satisfying their food needs during the year with rural households being most prone to food insecurity. Rural households rely primarily on subsistence agriculture and agricultural production in the recent past has been low due to droughts and land infertility. Consequently, rural agricultural produce is insufficient to satisfy food needs. In addition, it is difficult for non-agricultural households to procure food items mainly because agricultural households are unable to generate marketable surpluses; 84.79 percent of households that produced wheat did not sell in the local market. Where markets exist, they are fragmented and thin: the types of consumption goods that are available are

[32] This information is derived from a paper presented at a conference on Rural Finance in Afghanistan: The Challenge of the Opium Economy. The relevant papers presented in the conference include Steve Rasmussen titled "The current Situation of Rural Finance in Afghanistan" and by Samuel Maimbo titled "Building on the Informal Sector".

not sufficient to meet household consumption requirements. Food insecurity in Afghanistan is linked to worsening economic conditions: 62 percent of households that were food insecure also reported worse economic conditions compared to previous years. These households are especially vulnerable since they are unable to maintain consumption in the face of a fall in income.

Shelter, which is a key component of human security, is commonly available in Afghanistan. This is because approximately 70 percent of homesteads in Afghanistan are inherited. This also explains why only 9 percent households have difficulties making payments for housing. While this is positive, a little less than half of Afghan households have poor quality housing, which diminishes the value of shelter that is provided by homesteads.

Most households in Afghanistan do not have access to safe sanitation or drinking water. Safe sanitation and water facilities are mainly used by urban households (29 percent have access to safe sanitation while 22 percent have access to safe water). The quality of water does not depend upon its location: if safe water is available, it is located near the homestead. Only about 4 percent of households pay for drinking water, both unsafe and safe. Winter and summer fuel sources (for cooking and heating) are informal, implying their supply is erratic. With insecure supply of heating fuel, households are unable to sufficiently protect themselves against extreme weather. As with water and sanitation, formal fuel sources are used more by urban households. Approximately 24 percent of kuchi households have no access to heating fuel, making them particularly vulnerable to adverse weather. Payment for fuel does not reduce overall household entitlements significantly since this comprises only 0.08, 0.16 and 0.12 percent of household income for kuchi, rural and urban households respectively.

The discussion above shows that the condition of human security in Afghanistan is poor and pervasive across a broad gamut of sectors. Low and undiversified income makes it difficult for households to attain economic and food security. Standard of living is low: at a very basic level, households do not have access to good quality shelter. Security of health is threatened by poor condition of sanitation, unsafe drinking water and unavailability of fuel. The combination of these factors makes it difficult for households to attain long-term fulfilment – with the consequence that

households and individuals find it hard to safeguard the vital core of human life (Alkire 2002). This impact on long-term fulfilment relates human security to vulnerability: households are exposed to risks that increase insecurity and they lack the necessary entitlements to fortify themselves against these risks.

5.3. Exchange Freedom

Exchange freedom measures the extent to which households are able to freely exchange and/or generate additional entitlements. Loosely put, exchange freedom measures the extent to which households are freely able to engage in economic activity and capture those endowments that households have at their disposal to build resilience against risks and shocks.

Entitlements are of three main types: productive that can be produced, trade-based that can be traded for others or labour-based that can be earned in return for labour resources. Households are able to generate productive entitlements if they have access to land and livestock. In addition, credit provides the necessary financial capital that can be invested to increase the existing stock of entitlements. Labour entitlements depend upon the nature and quality of human capital, availability of labour and employability of labour. Finally trade entitlements result from exchange of assets such as household assets and dwelling.

Financial capital is essential for households to build on their existing resources and assets. Combining financial capital with existing resources at the disposal of households allows them to produce additional entitlements. Such a combination enables households to capture economies of scale in their productive activities. When analysing the role of credit in enhancing productive entitlements, it is important to consider the source of credit as well as the purpose for which credit is utilised. From the outset, it is important to point out that over 60 percent of Afghan households are unable to generate financial capital because they do not have access to credit. These households are obviously restricted in the extent to which they can enhance their productive resources. Of those households that are able to access credit, the majority rely on informal sources, which mainly consist of family and friends (90 percent). This reliance on informal credit results not only from a low supply of formal credit but also because family and friends

do not require extensive collateral and are therefore 'willing donors'. The terms of informal credit are not well-defined and can change during the period of the loan. Because interest rates are not regulated, informal credit becomes very expensive for households. More importantly, given the covariate element of conflict as a shock, informal sources of credit usually become unreliable (Shoji, 2008). Consequently, even those households that want to take up credit are unable to do so. A little under a third of Afghan households use credit for informal and emergency expenditures such as food purchases and health. Since these expenditures do not generate additional entitlements, it is difficult to repay the loan, causing overall household debt to increase. Per capita debt in Afghanistan amounts to US$ 378.30[33]. This is exorbitant when considering per capita income in Afghanistan is US$ 49.

Access to land allows households to generate productive entitlements through agricultural activity. In Afghanistan, land is a key source of productive entitlements since almost 33 percent of households derive income from agricultural activities[34]. Agricultural land in Afghanistan is of three main types: garden plots, irrigated land and rainfed land. Over half of Afghan households do have access to at least one of these land types. Garden plots provide the lowest potential for generating productive entitlements in that they are usually part of the homestead, smaller and irrigated through canals. Given their small size (on average 0.57 hectares), they are used for cultivation of fruits, nuts, grapes and, in rare instances, wheat. Irrigated land provides the greatest potential for generating productive entitlements because such land is developed collectively, land area is relatively large in comparison to garden plots and rainfed land, receives water throughout the year, is more fertile and produces greater yield. Given their relatively larger size (on average 1.69 hectares), this land is more suitable for cultivation of cereals and cash crops such as potatoes. Only about 11 percent of Afghan households have access to rainfed land. Though average holding of rainfed land is higher than that of irrigated land or garden plots, their potential to generate productive entitlements is restricted. These lands rely on rain for water and because Afghanistan has experienced severe droughts in recent years, these lands are not very fertile.

[33]Using 2005 Implied PPP Conversion Rate, International Monetary Fund, World Economic Outlook Database April 2009. US$1 = Afs 20.50

[34] These households are mainly located in rural areas. By their nature, urban and kuchi households do not engage in agricultural activities as a source of income.

Over half the households (59 percent) that own irrigated land crop it twice. Such cropping patterns imply double the potential for generating productive entitlements. Very few households that own land do not cultivate it (8 percent for irrigated and 15 percent for rainfed land). Most households own and self-cultivate their land (78 and 72 percent respectively for irrigated and rainfed land). This implies prevalence of subsistence agriculture. It also indicates that households engaged in self-cultivation do not undertake other forms of employment. It should be stressed that the ability to generate productive entitlements from land depends upon the capacity to cultivate, which in turn, is determined by access to good seed and farm implements, which is limited[35].

About one-third of Afghan households have no access to livestock. As expected, livestock ownership is highest amongst kuchi populations, with over 90 percent households having over 10 livestock per household, including cattle, donkeys, goats and sheep. Likewise, ownership of livestock in urban households is lower; households usually own goats, sheep and poultry, on average less than 10. Rural households mostly own between 10 and 50 animals, mostly cattle, goats, sheep and poultry. Such patterns of holding suggest that while kuchi populations use livestock as a primary source of income, rural households primarily use livestock to supplement agricultural activities and urban households use livestock produce for domestic consumption (World Bank 2008). Average ownership of animals such as horses, donkeys and camels, commonly used for transportation, is low, indicating livestock is used primarily for production of milk, yogurt and other dairy products. In addition, veterinary services of any kind are either not available or are of poor quality. Livestock care and management remains insufficient and sub-standard (World Bank 2008). Ownership patterns and utilisation of livestock imply that the potential of livestock to generate productive entitlements is limited in Afghanistan.

Trade-based entitlements are enhanced through the direct trading of assets and resources. Utilising trade-based entitlements is not easy in a post-conflict situation because the covariate component of conflict has a macro impact, which reduces trade-based entitlements for entire communities. This reduces the freedom to exchange assets and resources. One of the main

[35] Access to farming inputs is determined by the nature of access to markets. This is discussed in detail in subsequent chapters.

assets that can enhance trade entitlements is dwelling. A significant majority of households do not have proof of ownership. In the absence of a registered deed, when faced with shock, sale of property – to increase resilience is not a readily available option. On the demand side, given the macro impact of conflict, finding buyers for expensive purchases is not easy. There are other assets that could potentially be traded, including basic household assets (28 percent of households), income generating assets (27 percent of households), personal transport assets (36 percent of households) and communication equipment (10 percent of households). The last three categories have the potential to generate productive entitlements and are therefore not usually exchanged. For example, in the year prior to the survey, majority of the households (over 90 percent) did not engage in enhancing or reducing land. The extent to which household assets can increase trade based entitlements is low because these assets are basic in nature and most households own the same assets.

Labour entitlements result from the exchange of labour resources and are influenced by two factors: the level of education that determines the quality of labour; and, the nature of involvement in income generating activities that determines employment, as well as amount of labour utilisation. Education in Afghanistan is strikingly low: for a staggering 83 percent of households, the household head is educated only up to the primary level. Educational attainment is restricted for a number of reasons, lack of access being the main one (for 56 percent households). Children from 22 percent of the households were not allowed to attend school while only 13 percent of households did not attend school because of economic reasons (cost of schooling or requirement to work). Reading abilities are also low and reflect gender disparity. Only 16 percent of women and 40 percent of men are able to read. Reading abilities are higher amongst the younger age groups, between 6 and 18 years but remain low for older household members.

These numbers show that quality of labour entitlements amongst the current working-age population is very low. This dearth is manifested in low access to information, awareness and low returns from employment and implies limited ability to generate additional entitlements. This is corroborated by the fact that for 69 percent of households, income generating activities lie in the informal sector where labour is underutilised. Since the fall of the Taleban, a concerted effort has been made to increase enrolment rates. Consequently, within the ages of 6-13 years, 66 percent are

enrolled in school of which 61 percent are male while 39 percent are female. This is a positive trend, which will ensure greater quality of labour entitlements in the long run[36].

Given large family sizes, availability of labour entitlements is high. However, less than 40 percent of available labour is employed, implying underutilisation of total labour entitlements. Moreover, employment of labour is marred by gender disparity. For over 80 percent of the households, men participate in the primary income generating activity. This figure falls to approximately 70 percent for the second source of income. Female employment is significantly lower, approximately 2 percent households report female participants for the main source of income and 10 percent for the second source of income. This is primarily because the second source of income is usually livestock production or handicrafts, which are home-based activities and culturally more acceptable. The cultural constraint restricts women to home-based income generating activities, lowering their income generating potential.

The extent to which labour can be efficiently utilised is also determined by the availability of employment opportunities. In Afghan households, on average, 50 percent of the members are available to work, half of which are employed. However, for 39 percent of the households, less than half of the available labour is employed; even-though the labour entitlement is available, it is not gainfully utilised because there are insufficient employment opportunities.

5.4. Social Capital

The loss in social capital entitlements results from social exclusion; it pertains to the lack of belonging and awareness about surroundings, which could negatively influence household well-being. Moreover, social capital signifies the extent to which community members own the community within which they reside, as well as the strength of informal sources of support. However, data on such indicators is usually not collected, partially because sense of belonging is not easy to measure and partially because collecting data even for proxy indicators is not easy. Three indicators, for which data is usually possible and available, include membership in

[36] Female enrolment rates are heartening given that under the Taleban regime, women were not allowed to attend school.

community organisations, most important sources of information and nature of support received from fellow community members.

Community organisations in Afghanistan are of two types: the shura and the Community Development Councils (CDCs). The shura have traditionally represented communities and consist of village elders and other respected members. While on the face of it, it appears to be traditional and undemocratic in its structure, the shura and the decisions that are made by the body are accepted and respected by community members. The CDCs are new, established after the war, with democratically elected representatives. Some of these representatives are the same as shura leaders but some are different. The eventual aim is to merge these two organisations to the degree possible and provide them with legal recognition.

Membership in community organisations in Afghanistan is not high. Male membership is markedly higher than that of women, particularly in the shura (15.20 percent). Female membership in CDCs is relatively higher than that in the shura (0.62 percent compared to 0.43 percent)[37]. An obvious explanation for this is the fact that community mobilisation to form CDCs is high, emphasising women. CDC membership is low but given their short life, it can be expected that this will increase over time. Membership in shuras is also low and considering they have traditionally been the body of elders that have represented villagers, this figure is indeed alarming.

As mentioned, the shura embodies the seniority of elders within the community and although not legally recognised, it is respected by community members due to the fact that it is strongly embedded in the local institutional structure. More importantly, given the 30 years of war that Afghanistan has faced, the shura has remained constant in the face of institutional changes at the Central levels. The CDC on the other hand is a new structure of democratic representation at the community level. The present government uses the CDCs as a channel to disburse block grants for community reconstruction. Given this structure, it is important that the shuras work together with the CDCs to ensure peaceful and meaningful

[37] Female membership in community organisations is very low. Nevertheless, it is heartening to see that even-though the female CDCs were created in 2002 and they have not yet matured into robust community organisations, women do appear to be gaining CDC membership. It is also positive that although CDCs are much younger than the traditional shura, their membership is higher than that of the shura.

reconstruction that reflects the needs of the people. It is only in this way that maximum synergies and economies of scale can be captured. Only 0.81 percent of households have joint membership of male shura and male CDCs while the corresponding figure for women is 0.08 percent.

The joint membership in shura and CDCs is strikingly low. While there are many reasons to explain this, the important conclusion is that community development processes remain immature, underdeveloped and inefficient. In addition, institutional development of these organisations is low, which could indicate that their ability to benefit households, both economically and socially, is restricted and being a member or not is almost redundant. This could have a negative impact on social cohesion and development planning at the community levels.

Access to information is another key measure of integration since it shows the extent to which community members are aware of their surroundings. By keeping abreast with financial, economic and social development in their community, members are able to enhance exchange entitlements. However, majority of households have access only to informal sources of information, which are not only inaccurate but also ad hoc. While mostly, friends and neighbours are the main source of information for 57 percent of households, 32 percent households rely on the radio for information. This is a relatively more accurate and advantageous source of information particularly considering the high majority of community members who are unable to read.

Informal coping measures are a key source of risk management in Afghanistan. A total of 90.99 percent of households live in close proximity to their extended family members, suggesting strong familial support. In addition, given that villages in Afghanistan are structured around tribal affiliations, possibilities of informal support are high. Support provided to households usually takes the form of in-kind transfers while providing substantial help for provisions, such as finding jobs and cash, is not very common, although there is some evidence of support for debt relief and small loans. This nature of support is intuitive once the covariate nature of conflict is considered. Most community members have reduced entitlements that they can share. Therefore, this type of support cannot be relied upon to increase resilience against risks and protection against shocks.

5.5. Access

Entitlement loss resulting from loss of productive infrastructure is in itself multi-faceted and potentially relates to every aspect of post-conflict reconstruction. Physical infrastructure can relate to communications such as roads, land development, power generation, industrialisation, agricultural mechanisation etc. This study focuses on the former since it is critical to reconstruction efforts, particularly in those conflict ridden areas where settlements are remote and the topography difficult to traverse. Loss of communications infrastructure such as roads manifests itself in reduced access to health and education services and markets as well as time wastage in travelling. As mentioned above, one of the key reasons for low enrolment in education institutions is lack of access. In addition, given that main income generating activities relate to agricultural and livestock production, which are perishable products, even if households are able to generate marketable surpluses, they are unable to sell these in time.

As mentioned, the NRVA data does not provide sufficient data to measure all the indicators that influence access. Nevertheless, this chapter makes an attempt to highlight basic issues related to access, focussing specifically on availability and access to education. Availability of communications infrastructure is low: 46 percent of households have only footpaths leading up to their homesteads. This not only indicates a degree of isolation but also highlights the inability to access motorised vehicles. The unavailability of roads and transport services implies low mobility. It also implies low access to services. Over 50 percent households are unable to enrol in schools because schools are either too far or there are no facilities available to travel of schools. The markets most commonly accessed include village markets. District and provincial centre markets are not accessed as frequently (World Bank (2006)). Access to health services, particularly health centres is more common. Hospitals, which are located in provincial centres, are a little more difficult to access since they are located at a distance. While access to health centres exists, it should be emphasised that the quality of and diversity of health care provided in such centres is not very high (World Bank (2006)).

Most households do not have efficient access to services and markets, implying that when faced with health risks, or to expand labour entitlements, or to escape from adverse security conditions, households are likely to suffer well-being losses. This translates into poor resilience.

6. Conclusion

This chapter sought to analyse existing literature on vulnerability to identify indicators that can be used to measure it and identify thresholds that define vulnerability. Using these indicators, the chapter sought to highlight patterns of uni-dimensional deprivation in Afghanistan.

A number of observations can be made from the literature on the measurement of vulnerability. Existing vulnerability assessments tend to be ex-ante, focussing on disaster risk reduction. Such assessments do not provide sufficient insights into the dynamics of ex-post vulnerability that occurs after the occurrence of shock. In addition, assessments usually cater to the specific interests and priorities of the organisations making them, which can de-emphasise the specific needs of vulnerable populations. Further, vulnerability assessments are often substituted by poverty assessments, which tend to focus on indicators such as income and consumption. These measures do not fully capture the entire nature of losses characteristic of post-conflict environments. Compiling broader lists that capture the multidimensional nature of losses is difficult because not only is data scarce, there is no consensus on what to include in such 'broad lists'. Nevertheless, many authors agree that attempts to measure vulnerability should be context-specific, highlight the root causes of vulnerability and be realistic.

Based on these findings, the chapter presents a six-step methodology to measure multidimensional vulnerability. First, it requires the identification of domains of losses, which correspond to functionings losses. Second, the methodology splits the domains into the components of vulnerability: exposure to risk and lack of entitlements. The third step involves the identification of indicators to measure each component within each domain. The fourth step entails the establishment of thresholds for each indicator identified in Step 3. If a household is below the threshold, it is considered vulnerable. The fifth step determines cut-offs, the number of indicators across which a household need be deprived, to experience multidimensional vulnerability. Cut-offs are important since they help identify levels of vulnerability in terms of less vulnerable, vulnerable and very vulnerable. The final step develops a system of ranking that provides the levels of overall vulnerability.

After a comprehensive review of existing literature, the specific post-conflict environment of Afghanistan and keeping in mind data constraints, this study identifies a total of twenty eight indicators to assess deprivation and multidimensional vulnerability. The chapter uses NRVA (2005) data to analyse patterns of uni-dimensional deprivation. Analysing such patterns is essential to understand the type of impact the war has had on household well-being. It also helps highlight entitlement failure as well as the breakdown of processes by which households convert entitlements into functionings.

The analysis indicates that rural and kuchi populations are most deprived in Afghanistan, suffering loss of entitlements as well as exposure to risk. Most households are deprived in aspects of human security such as sanitation, access to safe drinking water and formal sources of cooking and heating fuel. A significant portion of the population also experiences deprivation across indicators that measure income stability and availability. Households face extreme deprivation across the domain of exchange freedom. The war has severely depleted production, trade-based and labour-based entitlements in Afghanistan. This deprivation is severe and contributes towards vulnerability not only by reducing household resilience but also because the breakdown of organisations and institutions implies that households are unable to fully utilise even the meagre entitlements to which they do have access. In the domain of social capital, the situation of deprivation is not severe. Even-though community membership is low and sources of information unreliable, informal risk-sharing arrangements are strong and there is a tradition of providing mutual help at the household level. Availability of access is limited in Afghanistan, which diminishes utilisation of services such as health and education and markets for productive purposes.

In this context of deprivation, the next chapter measures multidimensional vulnerability in Afghanistan using the methodology and indicators presented in this chapter.

Chapter 4 Profiling Vulnerability in Afghanistan

1. Introduction

Vulnerability has received significant attention by academics and practitioners alike, in the last two decades. However, existing definitions of vulnerability do not effectively encapsulate its dynamic nature and because there is no consensus on a workable definition of vulnerability, efforts at measuring vulnerability are usually incomprehensive and limited, usually focussing on indicators such as income or consumption deprivation. This study attempts to define vulnerability in post-conflict environments as the combination of lack of entitlements that reduces resilience against shock; and, exposure to risk that makes it difficult for households to convert their entitlements into functionings and well-being. Within this framework of analysis, the research argues that vulnerability is the result of multiple losses that characterise post-conflict environments, which cannot be fully captured using uni-dimensional measurement approaches.

The previous chapter developed a comprehensive approach to measure multidimensional vulnerability in post-conflict environments. The approach involves six steps, which include the identification of domains that correspond to functioning losses common in post-conflict environments; specifying components for each domain; identifying indicators to measure deprivation across each component in each domain; identifying thresholds below which a household is deemed vulnerable; identifying cut-offs i.e. the number of indicators across which a household must be deprived in order to experience multidimensional vulnerability; and, finally, combining all these aspects into one index to compile levels of vulnerability.

This chapter contributes to the literature on measurement of vulnerability by measuring multidimensional vulnerability for the case of post-conflict Afghanistan using the methodology and indicators compiled in the previous chapter and data from the National Risk and Vulnerability Assessment (NRVA) exercise conducted in 2005. The chapter has multiple objectives. First, it employs the indicators identified in the previous chapter to compute intra-domain vulnerability to determine the levels of vulnerability within each domain. Second, the chapter combines intra-domain vulnerability into an index to represent inter-domain or overall vulnerability for Afghanistan. Third, the chapter identifies, for the case of

Afghanistan, which components contribute more towards vulnerability: whether it is lack of entitlements or exposure to risk or both that cause household deprivation. Fourth, the chapter highlights the differences between indexation and the component-wise analysis. Finally, the chapter seeks to identify the determinants of vulnerability by analysing the incidence of vulnerability for different demographic characteristics.

The chapter has two main sections. The next measures multidimensional vulnerability while Section 3 identifies the determinants of vulnerability. Section 4 concludes.

2. Multidimensional Vulnerability

When measuring multidimensional vulnerability, a household is defined as less vulnerable when it is deprived in up to two indicators. However, since deprivation rates are so high in Afghanistan, deprivation across two indicators is almost akin to uni-dimensional vulnerability. Therefore, a stricter criterion is applied when identifying the vulnerable and very vulnerable households. These are those that suffer from losses across three and four indicators respectively. When calculating overall rates of multidimensional vulnerability at the two, three and four indicator levels, those indicators for which deprivation rates lie between 10 percent and 80 percent of the population, will not be used. Indicators for which deprivation rates lie outside this range may artificially inflate the results for multidimensional vulnerability.

Multidimensional vulnerability based on the dual cut-off approach has two components. One is intra-dimension vulnerability and the other is inter-dimensional vulnerability. The results presented in this section are divided in four sections. The first section presents results on intra-domain vulnerability to examine which combinations of indicators contribute towards vulnerability *within* a domain. The second section combines vulnerability within each domain into an index to present levels of overall vulnerability in Afghanistan. The third section presents an alternative approach towards measuring multidimensional vulnerability using a component-wise analysis, specifying which component of vulnerability affects the population more severely. Finally, the fourth section identifies the differences in approach while measuring multidimensional overall

inter-domain vulnerability and the component-wise measurement approach.

2.1. Intra-Domain Vulnerability

2.1.1. Human Security

Indicators for which more than 80 percent and less than 10 percent of the population is deprived are excluded in the calculation of multidimensional vulnerability. Based on this criterion, for the domain of human security, the indicators that are excluded include access to shelter, unsafe sanitation, unsafe drinking water and unreliability of fuel. The analysis is restricted to the indicators of average annual per capita income, diversification of income, frequency of income received, food security and condition of dwelling.

Table 1 provides information on the incidence of vulnerability across strata in the domain of human security.

Table 1: Incidence of Multidimensional Vulnerability – Human Security

	Kuchi	Rural	Urban	Total
Not vulnerable	13.03	16.52	41.09	20.96
Less vulnerable	25.01	25.82	27.89	26.17
Vulnerable	32.80	32.37	20.54	30.16
Very vulnerable	29.16	25.29	10.48	22.71

Source: Author's own calculation using NRVA (2005)

In the domain of human security, a total of 21 percent households are not vulnerable, while 26 percent of the households experience deprivation across two dimensions, 30 percent across three indicators and 23 percent of the households experience deprivation across four or more indicators. As is the case with uni-dimensional deprivation, vulnerability is higher for rural and kuchi households, with the latter being worse off. This conclusion is intuitive since living conditions and income generating opportunities are better for urban households as compared to rural and kuchi households.

These rates are broad and do not provide information on which out of the five indicators is contributing more towards vulnerability. Table 2 provides information on the numbers of households that experience deprivation

across specific combinations of indicators. For example, 30 percent of the households have average annual per capita income below US$ 456 and derive their income from less than two sources. Likewise, 42 percent households that have average annual per capita income below US$ 456 also experience food insecurity.

Table 2: Human Security – Two – Dimensional Vulnerability

	Income derived from less than two activities	Problems satisfying food needs for more	Problems satisfying food needs for more than 6 times a year	Poor condition of dwelling
Avg. Annual income below US$ 456.25	30.30	42.32	25.60	27.10
Income derived from less than two activities		31.82	11.43	22.07
Problems satisfying food needs for more than 6 times a year			29.08	31.48
Annual income received for less than 8 months				15.83

Source: Author's own calculation using NRVA (2005)

Based on the information in Table 2, it is possible to say that the indicators of income, food security and condition of shelter have greatest impact on vulnerability. Less than one-third of the population below the poverty line derives income from one source. This implies that diversity of sources does not necessarily generate greater income for Afghan households. Only about a quarter of the households living below the poverty line receive income infrequently. Income, low mean, only one source and low frequency all influence food security. As expected, poor households have a difficult time satisfying food needs. Condition of housing is also influenced by income: the poor tend to live in poor quality accommodation. Needless to say, if dimensions such as poor sanitation, water and informal sources of fuel were included in vulnerability measurements, majority of Afghan households would be severely vulnerable.

2.1.2. Exchange Freedom

Based on the criterion of excluding indicators for which overall deprivation rates are above 80 percent and less than 10 percent, for the domain of exchange freedom, only two indicators are excluded from the multidimensional analysis. These two indicators education of household head up to or below primary level and access to informal sources of credit.

Both these have been excluded leaving a total of nine indicators in this domain. These are summarised in Table 4.

Table 3 provides information on the incidence of vulnerability across strata in the domain of exchange freedom.

Table 3: Incidence of Multidimensional Vulnerability – Exchange Freedom

	Kuchi	Rural	Urban	Total
Not vulnerable	0.40	2.08	0.35	1.71
Less vulnerable	2.31	9.38	1.90	7.80
Vulnerable	4.84	17.98	7.76	15.64
Very vulnerable	92.45	70.57	89.98	74.85
Total	**100**	**100**	**100**	**100**

Source: Author's own calculation using NRVA (2005)

Vulnerability in this domain is severe. Only 2 percent of households are not vulnerable while 8 percent are less vulnerable, 16 percent are vulnerable and 75 percent are very vulnerable. The high vulnerability rates in this domain result from two distinct yet equally important reasons. First is the definition of the domain. Exchange freedom is determined by the ability of households to exchange three types of entitlements, including productive, trade-based and labour-based. When making a comprehensive list of indicators that measure these three types of entitlements across each component of vulnerability (exposure to risk and lack of entitlements), a much larger number of indicators are measured when compared to other domains, making the domains unbalanced. Second, over thirty years of war have severely depleted the stock of entitlements in Afghanistan. This creates extreme deprivation in all the indicators that measure exchange freedom.

Unlike other domains, in the domain of exchange freedom, more urban and kuchi households are deprived. However, a number of indicators used to measure this domain are not applicable to kuchi and urban households because of lifestyle choices. This result is also driven by the fact that for over thirty percent of households, agricultural activities are a key source of productive entitlements. These are undertaken mainly in rural areas. The practice of taking credit for productive purposes is also more common for rural households than for urban and kuchi households (even-though there

is evidence to suggest when urban households do take credit, they tend to use it more productively than rural households).

Table 4 provides information for the number of households that are deprived across specific combinations of indicators.

Table 4: Exchange Freedom – Two – Dimensional Vulnerability

	No access to credit	Credit used for consumption	No access to land	No reading abilities in hh.	% children not attending school	Less than 47% hh mem available to work	No. Ppl employed as % of all available	No access to livestock	Access of Assets
No proof of ownership	24.98	14.16	20.07	19.83	32.21	19.86	16.03	11.99	13.10
No access to credit		-	34.59	27.65	47.42	28.00	23.76	22.75	14.90
Credit used for consumption			13.92	11.88	21.70	13.85	11.41	9.80	9.87
No access to land				23.38	41.98	24.76	25.08	28.48	15.87
No reading abilities in hh.					40.01	20.88	14.09	12.26	14.91
% children not attending school						32.62	30.06	28.06	21.72
Less than 47% hh mem available to work							11.79	16.34	13.29
No. Ppl employed as % of all available to work less than 50%								17.80	9.75
No access to livestock									9.09

Source: Author's own calculation using NRVA (2005)

Access to and utilisation of credit appears to contribute most towards vulnerability. Vulnerability is also caused by lack of education. Availability is restricted and the ability to convert education into gainful employment is low; only 40 percent of those available to work are actually employed (see Table 3 in previous chapter). Only a quarter of the population available to work has access to credit and land, while less than 20 percent have access to livestock. The former inhibits households from fostering labour entitlements and the latter results in under utilisation of labour. Households that have low education or reading abilities also have low access to productive assets such as land, livestock and credit. This has a negative impact on the ability of the household to generate productive entitlements. Lack of access to household assets appears to have the least impact in enhancing vulnerability.

The results for this domain reveal a key aspect of the dynamics of vulnerability in Afghanistan: households are unable to create and/or exchange entitlements. The fact that households suffer from deprivation across such a high number of indicators also implies that these households are deprived of a basic stock of entitlements that could potentially be expanded to promote economic activities. Resultantly, the potential for economies of scale remains low. This reduces their ability to build resilience against an uncertain future.

2.1.3. Social Capital

Based on the criterion of excluding indicators that report deprivation for more than 80 percent and less than 10 percent of Afghan households, none of the four indicators in the domain of social capital are excluded.

Table 5 provides information on the incidence of vulnerability across strata in the domain of social capital.

Table 5: Incidence of Multidimensional Vulnerability – Social Capital

	Kuchi	Rural	Urban	Total
Not vulnerable	32.62	40.88	37.61	39.80
Less vulnerable	43.52	42.67	36.70	41.59
Vulnerable	15.45	11.98	18.90	13.48
Very vulnerable	8.42	4.47	6.78	5.13

Source: Author's own calculation using NRVA (2005)

Compared to other domains, vulnerability in the domain of social capital is low, with 40 percent of Afghan households not being vulnerable. A total of 42 percent of the households are less vulnerable, 13 percent being vulnerable and only 5 percent are very vulnerable. As with exchange freedom, the least vulnerable in this domain are the rural households. Because communities are ethnically homogenous, the trend to help each other is high, especially relative to urban households. Rural communities are engaged in disparate income generating activities, ensuring that the covariate nature of shock does not affect them as strongly as it does kuchi populations, which rely primarily on livestock activities. Consequently, the ability of rural households to help each other, even when faced with severe shock is higher than that of kuchi households.

Table 6 provides information on the numbers of households that experience deprivation in various combinations of indicators.

Table 6: Social Capital – Two – Dimensional Vulnerability

	No help received through	Access to none or informal	No support received through informal arrangements in year
No membership in community organisations	14.82	48.79	15.98
No help received through social networks		10.49	9.05
Access to none or informal sources of information			11.33

Source: Author's own calculation using NRVA (2005)

Majority of households do not have membership in community organisations. In theory, this would undermine the informal contract of mutual support that exists between community members. Particularly when combined with source of information, almost half of Afghan households are vulnerable in the functioning of social capital. However, community members do help each other frequently throughout the year. This is the reason why vulnerability in the domain of social capital is relatively low. Even-though almost 80 percent households are vulnerable because they do not have formal membership in community organisations, this figure drops to 15 percent when combined with the entitlement of access to informal support. When combined with frequency of support received, the total number of households that are vulnerable falls to 16 percent. The same reasoning can be applied to the case of source of information. Although 60 percent of the households have access to only informal sources of information, when combined with informal support received, the number of vulnerable households reduces to 10 percent. When combined with frequency of support, the number of vulnerable households falls to 11 percent.

Vulnerability in this domain is caused primarily because of deprivation across the indicators of membership in community organisations and reliance on informal sources of information. This is offset by the pervasiveness of informal support within the communities, redressing vulnerability in the domain of social capital.

2.1.4. Access

Using the two indicators for which data is available, it is possible to conclude that more than one-fourth of Afghan households are vulnerable in this domain, almost entirely consisting of kuchi and rural households only. Traditionally, rural infrastructure in Afghanistan was not very well developed and with prolonged war, existing infrastructure was destroyed, particularly tertiary level infrastructure that connects villages to villages and district centres. The implication of this deprivation is severe: the main reason for low enrolment in schools is the long distance.

Table 7: Incidence of Multidimensional Vulnerability - Access

	Kuchi	Rural	Urban	Total
Not vulnerable	59.88	69.09	96.02	73.65
Less vulnerable	40.12	30.91	3.98	26.35

Source: Author's own calculation using NRVA (2005)

A total of 46 percent households do not have roads leading up to their homestead. This restricts the ability to use motorised vehicles. A total of 50 percent households report their children do not attend school because the distance to the school is too much. At the two-indicator level, a total of 26 percent or over a quarter of Afghan households is unable to access education because of lack of access.

Conducting a three and four dimensional analysis of access is not possible because data is available only for two indicators within this domain.

Table 8 summarises the results for intra-domain vulnerability. Majority of households in Afghanistan experience two-dimensional vulnerability for the domains of social capital and access. Vulnerability rates increase for the domains of human security and exchange freedom when a stricter criterion of measurement is applied i.e. measuring deprivation across three or more indicators. Households particularly suffer from deprivation in the domain of exchange freedom: even at the four-dimension cut-off point, almost 75 percent of Afghan households experience vulnerability. A similar conclusion can be drawn for the functioning of human security, wherein almost one quarter of the population remains vulnerable at the four-dimension cut-off point.

Table 8: Levels of Vulnerability in Afghanistan (percentages)

	Human Security	Exchange Freedom	Social Capital	Access
Not Vulnerable	20.96	1.709	40.57	73.85
Less Vulnerable	26.17	7.796	41.34	26.15
Vulnerable	30.16	15.64	13.13	
Very Vulnerable	22.71	74.85	4.96	
	100	**100**	**100**	**100**

Less vulnerable: experiencing deprivation across two dimensions
Vulnerable: experiencing deprivation across three dimensions
Very Vulnerable: experiencing deprivation across four dimensions
The calculation of overall vulnerability is explained in the next section.
Source: Author's own calculation using NRVA (2005)

The next section analyses the situation of over-all vulnerability by extending the multidimensional measurement approach to an inter-domain analysis.

2.2. Inter-Domain Vulnerability

Methodologically, calculating inter-domain vulnerability is distinct from calculating vulnerability. This section outlines this methodological distinction, in addition to analysing the overall rates of vulnerability. Calculating inter-domain vulnerability is relatively more complicated since a number of aspects have to be accounted for. Because inter-domain vulnerability is measured by aggregating across domains, all possible combinations of vulnerable households have to be considered. The main question that arises is: how are different households with differing levels of intra-domain vulnerability treated? In order to answer this question, the criterion that determines levels of inter-domain vulnerability has to be changed. Based on their level of intra-domain vulnerability, households are given a rank, which measures possible combinations of intra-domain vulnerability. This is outlined in Table 9.

Table 9: Ranking of Overall-Vulnerability

Level of Vulnerability	Human Security	Exchange Freedom	Social Capital	Access
Not Vulnerable	0	0	0	0
Less Vulnerable	1	1	1	
Vulnerable	2	2	2	1
Very Vulnerable	3	3	3	

Different levels of vulnerability for each domain are assigned a rank between 0 and 3, representing none and uni-dimensional, two-dimensional, three-dimensional and four or higher dimensional vulnerability, respectively. The rank for access remains between 0 and 1 because households can suffer a maximum of two-dimensional vulnerability in this domain. If households suffer highest possible vulnerability in each domain, they attain a rank of 10, 3 each for the domains of human security, exchange freedom and social capital and one for access. If they suffer no vulnerability, they attain a rank of 0. Based on this, it is possible to define the range of the rank as lying between 0 and 10. Every value that falls between 0 and 10 represents differing combinations of inter-domain vulnerability and represents not just multi-dimensional vulnerability but also multi-dimensional vulnerability at a multi-domain level (the dual cut-off as defined by Alkire and Forster 2007). So, for example, households that suffer two-dimensional vulnerability in the two domains of human security and exchange freedom would receive a rank of 2: they receive a rank of one each for intra-domain vulnerability, which is aggregated across domains. However, a rank of 2 can also be achieved if a household experiences three-dimensional vulnerability across any one domain. Since it is not objectively possible to say which of these two households is more vulnerable, the assignment of the same ranks treats these two households equally.

Based on this system of ranking, the criterion for being not vulnerable, less vulnerable, vulnerable and very vulnerable is as follows: a household is not vulnerable if the rank is 0. It is considered less vulnerable if the rank is between 1 and 3, vulnerable if the rank is between 4 and 7 and very vulnerable if the rank is between 8 and 10. Table 10 shows the number of households at each level. Overall level of vulnerability in Afghanistan is high, with a significant portion of the population receiving an overall rank of between 4 and 7. This translates into multidimensional vulnerability mainly at the three- and four-dimensional levels.

Table 10: Vulnerability in Afghanistan – Overall Levels

Levels	% Households
Not Vulnerable	0.22
Less Vulnerable	15.46
Vulnerable	74.51
Very Vulnerable	9.81
Total	**100**

Source: Author's own calculation using NRVA (2005)

However, this analysis does not provide insights into the specific domains that are driving up these results. Table 11 identifies specific combinations of vulnerability, irrespective of the level of vulnerability experienced by the household. The table shows that 77 percent of households that are vulnerable in the domain of human security, at all levels, are also vulnerable in the domain of exchange freedom. Likewise, almost 48 percent of households suffer vulnerability in human security and social capital, 23 percent in human security and access, 58 percent in exchange freedom and social capital, 26 percent in exchange freedom and access and 17 percent in social capital and access.

Table 11: Inter-domain Vulnerability: Specific Combinations

	Exchange Freedom	Social Capital	Access
Human Security	77.99	47.51	22.99
Exchange Freedom		58.61	25.74
Social Capital			17.07

Source: Author's own calculation using NRVA (2005)

Table 11 shows that, as indicated in earlier sections, deprivation in the domains of human security and exchange freedom are key determinants of vulnerability whereas the domains of social capital and access contribute less towards vulnerability. This conclusion has policy implications: in order to reduce vulnerability, exchange freedom and human security have to be enhanced significantly.

2.3. Components of Vulnerability

To recall, vulnerability is the combined result of lack of entitlements and exposure to risk. The former creates internal defencelessness through

reduced resilience. The latter reduces household ability to convert their entitlements into functionings because the external environment surrounding the household becomes uncertain. This increases external defencelessness.

With this definition in mind, in order to make an effective profile of vulnerability, it is important to identify which component contributes more towards vulnerability. This section presents component-wise results for vulnerability at both the intra- and inter-domain levels. Calculating intra-domain vulnerability is straightforward. Households are not vulnerable if they experience either *no* deprivation or deprivation in *one* indicator across both components of exposure to risk as well as lack of entitlements. In measuring component-wise intra-domain vulnerability, levels are not emphasised, rather multidimensionality is measured simply when households experience deprivation in more than two indicators within each component. Households are vulnerable with respect to exposure to risk if they experience deprivation in two or more indicators that measure this component in a particular domain. Likewise, households are vulnerable with respect to lack of entitlements if they experience deprivation in two or more indicators that measure this component in a particular domain. Households are particularly vulnerable if they experience deprivation in indicators that measure both components.

Based on this criterion, component-wise vulnerability rates broken down at the intra-domain level are presented in Table 12.

Table 12: Component-wise Intra-domain Vulnerability Rates

	Human Security	Exchange Freedom	Social Capital	Access
Not vulnerable	35.32	5.80	78.22	29.70
Exposure to risk (ETR)	5.81	6.73	6.63	20.44
Lack of entitlements (LOE)	48.51	47.91	10.03	23.51
ETR and LOE	10.36	39.57	5.13	26.35
Total	**100**	**100**	**100**	**100**

Source: Author's own calculation using NRVA (2005)

The table also shows that vulnerability is caused primarily by the lack of entitlements; in all four domains, majority of Afghan households experience deprivation across this component. In contrast, exposure to risk is a less severe problem as relatively fewer households experience deprivation in

this component alone. However, this study argues that vulnerability is the combination of both components. Therefore, it is the households that experience deprivation in both components that are truly vulnerable.

As when measuring levels of vulnerability, measuring overall inter-domain component-wise vulnerability also requires the assignment of ranks to vulnerable households for each component. For each component, the rank encapsulates the different combinations of indicators across domains. It combines three distinct aspects of measurement: component, which is either exposure to risk, lack of entitlements, or both; the various domains that are being combined; and, the aggregation across domains that, in fact, capture the multidimensionality. Households are assigned a value of 0 if they experience none or uni-dimensional vulnerability and one if they experience deprivation across two or more indicators. Therefore, when aggregating across the four domains, the minimum rank that can be attained is 0 and the maximum is 4 for each component. Households experience exposure to risk if their aggregated rank for that component is higher than or equal to 2. Likewise, they experience lack of entitlements if their aggregated rank for that component is higher than or equal to 2. Households are particularly vulnerable when they experience combined deprivation in both components of vulnerability: exposure to risk *and* lack of entitlements.

Based on this definition, Table 13 presents a component-wise breakdown of vulnerable households.

Table 13: Component-wise Breakdown of Vulnerable Households

Component	Overall
Not vulnerable	0.68
Exposure to risk (ETR)	2.56
Lack of entitlements (LOE)	20.86
ETR and LOE	75.90
Total	**100**

Source: Author's own calculation using NRVA (2005)

A very small proportion of Afghan households experience only exposure to risk. In contrast, a relatively higher percentage of households experience lack of entitlements. This conclusion is intuitive because it reflects the severe depletion of resources caused by prolonged war in Afghanistan. When measuring overall vulnerability, over 75 percent of the population

experiences deprivation across both components. This is in line with the hypothesis regarding vulnerability in post-conflict environments: overall vulnerability in Afghanistan is the combined result of exposure to risk that results from external defencelessness; as well as lack of entitlements that results from internal defencelessness. In Sen's terminology (1981, 1989, 1997) of entitlements, capabilities and functionings, this deprivation implies that households lack the capabilities to effectively *utilise* resources they have at their disposal (entitlements) and *convert* them into states of well-being (functionings).

2.4. Comparing the Overall and Component-wise Measurements

The overall and component-wise analyses represent two distinct approaches towards multidimensional measurement. The first is applied when compiling levels of overall vulnerability in Afghanistan while the second becomes relevant when analysing which component of vulnerability contributes more towards the phenomenon. The distinctiveness of the approaches arises because the relevant set of indicators within one domain is different for the two types of analyses: for the component-wise analysis, the emphasis shifts to a subset of indicators. When calculating overall vulnerability within or across a domain, it does not matter how the indicators in which a household is deprived are distributed across the components. However, this distribution becomes relevant when making a component-wise analysis. A household would be considered vulnerable in the overall analysis if it is deprived across two indicators, one in each component because it experiences multidimensional vulnerability. When aggregating at the component level, the same household is considered not vulnerable because within each component the household experiences only uni-dimensional vulnerability. Therefore, the proportion of vulnerable and not vulnerable households differs depending on which approach is used. These differences are summarised in Table 4.

Table 14: Comparing Overall and Component-wise Vulnerability Measurement

	Human Security		Exchange Freedom		Social Capital		Access		Inter-Domain	
	Overall	Component-wise	Overall	Component-wise	Overall	Component-wise	Overall	Component-wise	Overall	Component-wise
Not Vulnerable	20.78	35.56	1.71	5.80	40.57	78.81	73.85	29.66	0.22	0.68
Vulnerable	79.22	64.44	98.29	94.21	59.43	21.19	26.15	70.34	99.78	99.32
Total	100	100	100	100	100	100	100	100	100	100

Source: Author's own calculation using NRVA (2005)

3. Determinants of Vulnerability

From the analysis above, it is possible to conclude that loss of exchange freedom contributes significantly towards creating vulnerability while having social capital in the form of informal support contributes towards reducing vulnerability. It is also possible to say that while exposure to risk is an important component of vulnerability, the lack of entitlements component contributes more towards creating it. This is expected given the high level of deprivation across dimensions. If overall levels of vulnerability are analysed, 60 percent of households that experience exposure to risk also experience lack of entitlements.

With this brief contextualisation, this section analyses vulnerability based on demographic characteristics. The analysis is divided in two parts: one examines levels of vulnerability based on the characteristics and the other identifies the incidence of vulnerability based on its components.

3.1. Levels of Vulnerability

As shown in Table 15, majority of Afghan households are vulnerable, which means they score an overall vulnerability rank of between 4 and 7. At this level, irrespective of the determinant, rates of vulnerability are similar. It is not possible to say which determinants contribute more towards vulnerability. Variation in vulnerability rates becomes apparent when considering the very vulnerable households. At this level, it is possible to identify those demographic characteristics that contribute more towards vulnerability.

When considering population strata, kuchi populations have the highest incidence of vulnerability followed by rural populations. In terms of income generating activities, households that rely on agricultural wage labour are most prone to vulnerability followed by households engaged in livestock activities. Households that rely on other wage labour, remittances and other informal activities also experience vulnerability albeit to a lesser degree. Households that derive income from formal employment, opium activities, agriculture or small businesses have the lowest incidence of vulnerability. The impact of education on vulnerability is as expected. The incidence of vulnerability is higher for households where the household head has no education than households where the household head is educated. Interestingly, the number of vulnerable households where the household head has received post-graduate education is higher than households where the head has received university education. This is because employment opportunities for highly educated Afghans are low. In terms of household sizes, vulnerability is higher for households that have none or up to three children. The incidence of vulnerability reduces as the household size increases, indicating economies of scale of living in the family. Finally, the incidence of vulnerability is higher for households that have more women than men. For Afghanistan, this result is intuitive since cultural traditions prevent women from engaging in economic or social activities.

Table 15: Determinants of Vulnerability – Levels (% households)

	Overall Vulnerability			
	Not vulnerable	Less Vulnerable	Vulnerable	Very Vulnerable
	Strata			
Kuchi	0.06	5.53	75.73	18.67
Rural	0.27	15.66	73.55	10.52
Urban	0.06	17.47	78.73	3.75
	Income Generating Activity			
Agriculture	0.34	18.33	72.51	8.81
Livestock	0.07	10.31	71.41	18.20
Formal employment	0.33	19.92	76.03	3.72
Income from opium	0.61	34.09	61.40	3.90
Small businesses	0.22	17.52	76.35	5.91
Agricultural wage labour	0.15	4.72	70.19	24.94
Other wage labour	0.04	7.61	79.39	12.96
Remittances	0.25	19.60	70.44	9.72
Other	0.09	14.40	73.18	12.32
	Education of Household Head			
None	0.12	11.39	73.53	14.96
Primary	0.18	20.00	74.66	5.16
Secondary	0.41	22.94	72.79	3.86
High School	0.47	26.21	72.01	1.31
University	0.29	27.38	71.87	0.46
Post Graduate	1.18	34.24	63.37	1.21
	Number of Children			
None	0.08	14.20	77.76	7.95
1 to 3	0.29	16.11	73.43	10.17
4 to 5	0.13	14.75	74.74	10.39
6 +	0.31	15.62	75.37	8.69
	Household Composition			
More Men	0.22	15.56	74.63	9.60
More women	0.24	15.13	74.11	10.52

Source: Author's own calculation using NRVA (2005)

3.2. Component-wise Analysis

Table 16 breaks down vulnerability into its components: it highlights those households that suffer from exposure to risk only, lack of entitlements only and both. Based on the definition, it is this latter category of households that is truly vulnerable. As the table shows, irrespective of the demographic category, the largest number of households suffers from exposure to risk as well as lack of entitlements. Moreover, the lack of entitlements by itself is a more pervasive problem affecting a relatively higher majority of households than exposure to risk. This is particularly true for households that derive their income from relatively more formal activities, households for which the head is educated and households with a higher number of children. Formal income generating activities ensure availability of income throughout the year, which ensures protection against risks. For households where the head is educated, the incidence of overall vulnerability is lower compared to households where the head is uneducated even-though the former experiences a greater lack of entitlements. Households with a higher number of children are less vulnerable than households with no children. Even-though they have lower entitlements, they have low exposure to risk because of the availability of additional labour, which can be mobilised when necessary. Households with more men than women have lower entitlements than households with more women but are, in overall terms, less vulnerable. This is because of exposure to risk: women are unable to fully utilise their labour entitlements because of cultural constraints.

Table 16: Determinants of Vulnerability – Components (% households)

	Not vulnerable	Only ETR	Only LOE	ETR and LOE
	Strata			
Kuchi	0.23	0.75	9.16	89.86
Rural	0.79	3.09	17.43	78.70
Urban	0.31	0.60	40.71	58.38
	Income Generating Activities			
Agriculture	1.14	4.01	18.34	76.52
Livestock	0.44	2.06	13.60	83.90
Formal employment	0.66	1.74	35.91	61.68
Income from opium	2.43	2.77	13.70	81.10
Small businesses	0.55	1.96	28.68	68.81
Agricultural wage labour	0.22	1.00	14.00	84.79
Other wage labour	0.26	2.01	16.49	81.24
Remittances	0.50	4.10	13.66	81.74
Other	0.10	1.02	22.18	76.69
	Education of Household Head			
None	0.29	2.75	9.04	87.92
Primary	1.06	3.65	25.09	70.20
Secondary	1.52	3.49	30.47	64.53
High School	1.14	3.64	36.75	58.48
University	1.11	2.13	47.66	49.10
Post Graduate	1.19	1.18	49.91	47.73
	Total Number of Children			
None	0.50	3.60	13.66	82.24
1 to 3	0.89	2.92	21.16	75.02
4 to 5	0.35	1.31	24.18	74.16
6 +	0.51	1.61	23.27	74.61
	Household Composition			
More Men	0.70	2.66	21.82	74.82
More women	0.62	2.22	17.57	79.59

Source: Author's own calculation using NRVA (2005)

4. Conclusion

Vulnerability persists in post-conflict environments due to the combined impact of reduced entitlements at a point in time and uncertain access to

entitlements over time i.e. the loss of both the **availability of** and **access to** resources. Vulnerability results from the combination of low and fragile entitlements; low entitlements at a point in time capture the poverty element of vulnerability, while fragility captures the uncertainty of entitlements over time, which results from exposure to risk. How this vulnerability is internalised by households is determined by a covariate and idiosyncratic impact. The covariate component is determined by the external environment that households find themselves in, while the idiosyncratic component is determined by household entitlements.

This chapter sought to develop a profile of vulnerability for Afghanistan using the NRVA (2005) data. The specific aims of the chapter were five-fold: to measure vulnerability within domains; to combine intra-domain vulnerability into an index of overall vulnerability in Afghanistan; to identify which components of vulnerability contribute more towards the phenomenon; to identify the conceptual differences between the use of the index and the component-wise analysis; and to identify the determinants of vulnerability.

At the intra-domain level, majority of Afghan households experience two-dimensional vulnerability in the domains of human security, social capital and access. Vulnerability in the domain of exchange freedom is more severe and implies deprivation across three or more indicators. At the inter-domain level, the majority of the households in Afghanistan experience high levels of vulnerability, particularly in the domains of human security and exchange freedom. Using inter-domain analysis, it is possible to say that while lack of exchange freedom exacerbates vulnerability, having social capital, or more specifically, informal exchange at the community level, contributes less and may even help redress vulnerability.

The incidence of vulnerability is higher for kuchi and rural households and households that rely on livestock activities, wage labour and remittances for income. Also, the incidence of vulnerability is higher for those households where the household head is uneducated. Households with up to three children are more vulnerable than households with more than three children or households without children. This indicates the existence of economies of scale of living in a family. This difference in the incidence of vulnerability can also be explained by the fact that having more children implies a greater availability of labour entitlements and lower vulnerability.

In terms of components, the number of households that experience only exposure to risk is much lower compared to those households that experience only lack of entitlements. If lack of entitlements is used as a proxy measure for poverty at a point in time, it is possible to say that poverty is widespread in Afghanistan. Nevertheless, the majority of households experience both exposure to risk as well as lack of entitlements, which reinforces the fact that vulnerability results from the combination of both components. Analysing vulnerability based on its components is necessary because it helps establish the fact that it is not just deprivation, which makes households vulnerable but also the inability to convert resources into well-being.

Kuchi and rural households have a higher incidence of vulnerability than urban households, which suffer more from lack of entitlements than exposure to risk. Likewise, households that engage in regular income generating activities such as formal employment and small businesses have lower levels of exposure to risk as well as lower vulnerability in comparison to other income generating activities. Education also reduces the incidence of vulnerability, mainly because if the household head is educated, exposure to risk is reduced. Households with children have lower entitlements but also lower vulnerability. This can be explained by the fact that these households have greater labour entitlements that can be utilised in the future or when shocks occur.

Measuring vulnerability using a multidimensional dimensional approach is marred by two key constraints. First, each of the four domains analysed have a differing number of indicators. The greater the number of indicators, the more inflated the results are for multidimensional vulnerability. Second, indicators of vulnerability are not weighted because the assumption is that each indicator is important in itself. This implies that for domains which have a higher number of indicators such as human security and exchange freedom, each indicator gets a lower weight. Conversely, for domains that have a low number of indicators such as social capital and access, each indicator gets a higher weight. This becomes a problem particularly when calculating inter-domain multidimensional vulnerability: the indicators that measure social capital and access are implicitly weighted higher.

The profile developed in this chapter focuses on the idiosyncratic component and highlights this for a multitude of entitlement losses. It captures the covariate component by showing how external risks combined with low entitlements reduce household resilience against future shocks and prevent households from converting their entitlements into functionings. The analysis argues that entitlement failure has implications for the household at a point in time, but when combined with other entitlement losses, it increases exposure to risk. Such exposure makes households susceptible to loss of well-being in the future. This combination makes households vulnerable. Response mechanisms aimed at reducing vulnerability should therefore focus on enhancing entitlements as well as reducing exposure towards risks. The latter would decrease when the household would be able to convert entitlements into functionings. Interventions that are geared towards reducing vulnerability are usually not so comprehensive as to address all these aspects of the phenomenon.

Chapter 5 Responding to Post-conflict Vulnerability

1. Introduction

In post-conflict environments (PCEs), vulnerability results from the combination of various characteristics. First, post-conflict environments are marred by a crisis of political legitimacy. Weak states are unable to guarantee rights and allocate scarce resources in an equitable manner. This results in exclusion of certain groups, could lead to furthering tensions and a resurgence of the conflict. Second, conflict implies widespread destruction of productive resources. Economic institutions are weakened, capital (physical and human) is lost or greatly depleted, investments are low because assets are kept liquid and corruption is high. The violence and economic destruction leads to the third characteristic: flight of skilled workers. The semi-skilled and unskilled workers left behind face significant unemployment, contributing towards social and psychological problems. Fourth, post-conflict governments face a lack of funds necessary for reconstruction, which creates a reliance on the benevolence of aid agencies and donors. Such organisations respond to their own agendas and priorities, which may not always coincide with the priorities, agendas and needs of the population affected by the conflict. Finally, reconstruction efforts usually do not adequately address the specific needs of women, who end up being marginalised.

These characteristics can be summarised in four categories of losses[38] that adversely affect well-being, exacerbate the fragility of an already weak system and uncertainty of the future. The first is human security, which according to the UNDP's Human Development Report (HDR), hinges upon seven areas: economic, food, health, environmental, personal, community and political security. Such a categorisation does not only leave the concept of human security broad and vague, these categories are not always distinct. In practice, the lines between these categories remain blurred. Also, particularly in PCEs, due to funding constraints and prioritisation, aspects of security such as environmental, are usually ignored in reconstruction. The second is loss of exchange possibilities, which is directly linked to a fall in resources. Not only are there fewer resources to exchange, the freedom to

[38] This list is by no means exhaustive and can vary according to the type and location of conflict being considered. However, this research limits itself to the impact of these categories on well-being.

exchange existing resources is also reduced. The third is a loss in social capital which erodes the sense of belonging or being part of a community. This implies that informal sources of support are diminished. The fourth category is a loss of access to services and institutions. The destruction of physical infrastructure reduces access to markets and services such as health and education while the destruction of social infrastructure reduces access to state institutions.

The constellation of these losses gives rise to a particular kind of vulnerability[39]. It is multi-dimensional and thinking of it in terms of money-metric figures is insufficient. Conflict has multiple levels of impact. It has a macro (universal) impact that affects communities and nations as a whole. It also has an idiosyncratic component, which manifests at the micro-level. Widespread poverty reduces household and individual resilience to fortify against unforeseen risks. Macro-economic breakdown implies market-based resources cannot be relied upon to cope with risks.

Post-conflict vulnerability therefore, is the result of exposure to risk that causes external defencelessness and a lack of entitlements that causes internal defencelessness. The former increases uncertainty about the future while the latter reduces resilience against the uncertainty.

This chapter seeks to investigate appropriate ways to respond to vulnerability. It identifies a number of coping strategies and highlights the ones that are more relevant in post-conflict situations. Section 2 focuses on the main types of coping strategies and their relevance in post-conflict environments. This section also examines various types of possible policies. Section 3 surveys the efficacy of workfare in reducing post-conflict vulnerability. Section 4 tests the relevance of workfare programmes in the case of post-conflict Afghanistan. Section 5 concludes.

2. Possible Coping Strategies

Households and individuals can respond to shocks either before the occurrence of a shock, ex-ante; or, they can respond after the shock has occurred, ex-post (Alderman and Paxson 1992, Dercon 2000, Holzmann and Jorgensen 1999, De Neubourg and Wiegand 2000). Ex-ante risk management

[39] For a detailed explanation of post-conflict environments and the definition of vulnerability please see Chapter 2.

measures can be categorised as prevention and mitigation. Preventative strategies are those that aim at avoiding risk by organising economic and social life such that the probability of a shock is reduced. Specific measures could include macroeconomic and social policies, infrastructure construction and other areas of public intervention. Mitigation strategies are aimed at reducing the potential impact of a contingency once the risk will materialise by spreading the economic and social resources of individuals. Specific measures of mitigation strategies could include diversification, insurance and hedging. Ex-post measures usually consist of coping strategies that aim to relieve the impact of a shock once it occurs through *risk-sharing*. Possible coping strategies could include depletion of savings, borrowing, transfers etc. and also specific government intervention.

Post-conflict environments are those where a shock has already occurred. Therefore, households rely on coping strategies to redress the negative impact of a conflict. The occurrence of conflict creates new risks that threaten income flows and well-being, which may not exist in the pre-conflict period. An appropriate response should consequently also help mitigate the new risks and enable households and individuals to maintain an acceptable standard of well-being.

2.1. Nature of Strategies

Risk coping strategies allow households and individuals to manage as well as share risks. They can take the form of three distinct types of arrangements: informal/personal, formal market-based and formal/publicly mandated (Holzman and Jorgenson, 1999, Norton et al 2001, Holzman et al, 2003). The choice of strategy is crucial because depending on the nature of shock, the choice of coping strategies can reinforce vulnerability in the long run. Moreover, the nature of coping strategies changes as the needs of the people evolve. Therefore, pre and mid shock strategies differ from post-shock strategies.

This section briefly highlights the efficacy of the various types of coping strategies in the face of shock.

2.1.1. Informal Risk-sharing Arrangements

Informal risk-sharing arrangements include risk pooling amongst relatives, friends and other community members, precautionary savings, informal credit schemes, buying and selling of real assets, community based risk management schemes etc. These are useful because within a community, individuals know and trust each other; identifying the poor and their needs is easier. Such strategies also imply easier monitoring possibilities. Moreover, in the absence of other robust risk management strategies, individuals and households have the commitment to make informal mechanisms work better.

Nevertheless, there is significant literature that studies the value of informal risk management strategies in the face of covariate shocks such as conflict, drought, floods etc. They find that with covariate shocks that affect everyone in the community, informal coping measures are not the most effective instruments for risk management (Dercon 2000, Skoufias and Quisumbing, 2003, Morduch 1999, Bhattamishra and Barett 2008). Informal community based coping measures have a tendency to be co-opted by local elite structures and there is a high potential for corruption. This directly leads to exclusion of certain groups. These divisions could be along ethnic lines (Mansuri and Rao 2004, Conning and Kevane 2002 in Barrett et al 2004). Such measures target households or individuals but do not target intra-household distribution of resources, which usually adversely affect women (Stewart 2005). Also, community based measures do not target the poorest of the poor, leading to their further exclusion.

Shoji (2008) finds that in response to floods, farmers in Bangladesh access credit. For it to be beneficial though, credit would have to be interest free. Such loans are not available and individuals are forced to take loans at high interest rates, thereby exacerbating their vulnerability. In addition, the poor are usually unable to access credit due to lack of availability of collateral.

Another typical response is to increase labour supply. This is useful only when there are sufficient employment opportunities to absorb the increased labour supply. In addition, higher labour supply leads to a fall in marginal productivity. Accessing education improves the possibility for off-farm employment but the effects of education are limited when the economic conditions are not suited for poverty reduction and economic growth

(Bruck 2004). Janvry et al (2004) also find that when poor households in Mexico are faced with shock, a typical response is to increase the supply of child labour. Children are removed from school and are usually not sent back. This disrupts the human capital accumulation process.

Informal insurance schemes also do not prove to be very useful for risk coping since, as Dercon (2000) points out, the covariance of asset values and income with common shocks renders them ineffective. While analysing risk management practices for households in post-war Mozambique, Bruck (2004) finds that the larger the asset ownership of households, the better their capability to utilise insurance schemes. This, by definition, is exclusionary because the poor and vulnerable either do not have such assets or they are 'lumpy' and not sufficient for risk management (Dercon 2000, Morduch and Sharma 2001). The possibilities for income diversification are also limited since costs of transactions are high, there is market failure for a range of products and services and; where markets exist, entry is either restricted or difficult.

2.1.2. Formal Market-Based Risk Management

The usefulness of formal market-based risk coping measures has been explored in the literature albeit not as thoroughly as informal and public measures. Perhaps the most effective exploration of such measures was in the World Development Report (WDR) 2000/2001, which argues that a necessary pre-requisite for such measures to be successful is economic and infrastructure growth. As discussed, post-conflict environments are plagued with macro-economic breakdown and destruction of infrastructure, physical and financial. In addition, migration of skilled workers causes a huge dearth of human capital that could help reconstruction.

Two very common market-based measures include insurance and credit. Insurance arrangements are effective only when the risk of being affected by a shock is randomly distributed across the population. However, conflict has a covariate nature that renders insurance ineffective. Mostly in less developed conflict prone countries, formal insurance is not very well developed. Even when it is available, in both the mid and post-conflict stages, migration and uncertainty may show a rising tendency. Increased migration reduces the possibility of risk pooling. This increases premiums, making insurance unaffordable for majority of the poor, resulting in

increased vulnerability. Moreover, insurance provision remains restricted due to significant information asymmetries. On the demand side, the poor may not simply be aware of existing insurance schemes, which reduces uptake. On the supply side, because the poor are involved in the informal sector and are not able to fully disclose financial information, insurance companies are unwilling to supply.

Banks and financial institutions are also constrained in the provision of credit first because they are unable to ascertain an individual's or a household's ability to repay the loan. This is exacerbated by the fact that poor households and especially internally displaced people are unable to provide sufficient collateral. As with insurance, uncertainty increases interest rates making credit unaffordable. In many parts of the developing world, microfinance institutions have helped the poor in accessing credit. Such organisations use social networks as collateral. In post-conflict countries, particularly those that are ethnically diverse, the probability of default remains high. This could possibly contribute towards social strife and, in an extreme case, a resurgence of the conflict.

Entry and participation in markets is usually determined by an initial endowment of assets. Since the poor do not possess such assets, either their entry is restricted or their participation is not as effective as it could be. Moreover, in post-conflict environments, participating in formal market-based activities is a risky venture that reinforces vulnerability (Norton et al, 2002).

Formal market-based risk coping measures are usually not available to the poor in post-conflict situations. Even when they are available, information asymmetries restrict their uptake or increase costs of transactions to such levels making them unaffordable by the poor.

2.1.3. Formal Publicly Mandated Arrangements

As mentioned, post-conflict vulnerability is the combination of internal and external defencelessness. The first is specific to individuals or households, while the latter is a general feature of the environment within which the individual or household is placed. Informal and market-based risk coping measures may help reduce the first source of vulnerability by improving the nature of entitlements, which households and individuals can control but

they do not help reduce external defencelessness. It is to redress this aspect of vulnerability that justifies government involvement. Therefore government involvement in the implementation of risk coping measures is not justified on efficiency grounds, rather because in many cases, it is the only recourse available to the poor to cope with risks.

Given the characteristics of PCEs, formal publicly mandated risk coping measures are not entirely effective in supporting households. Nevertheless, the studies cited above, suggest a role for the government to play in the delivery of social safety nets, especially when 'all else fails'. This is particularly true in the case of systemic, covariate shocks where the probability of being affected is not randomly distributed across the population.

Governments can implement various types of safety nets to achieve these objectives. The next section briefly analyses different types of safety net programmes and the relevance of each in reducing post-conflict vulnerability.

2.2. Types of Policies

From the outset, any policy that aims to reduce post-conflict vulnerability should be able to adapt itself in order to address the evolving needs of the affected population. This section reviews different types of safety nets to understand how effectively they can contribute towards the reduction of post-conflict vulnerability. While there is no set formula on an ideal type of safety net, there are various options from which an appropriate choice can be made. These include subsidies, food-based safety nets and transfer programmes.

2.2.1. Subsidies

Alderman (2002) analysed the role of subsidies as a social safety net. Based on an extensive literature review, he highlights five main advantages for the implementation of subsidies. First, by subsidising key necessities such as food or education, governments make it affordable for poor households to avail these necessities. This is especially relevant since these households are responsive to such price changes. Second, governments can use subsidies as a means to ensure consumption of certain items that a society deems

necessary for basic survival. Third, political support for subsidies is easy to garner. On the one hand, compared to direct income transfers, taxpayers are more likely to agree to imposition of subsidies for selected items; and, on the other, beneficiaries are satisfied by lower prices of important commodities. Fourth, depending upon the nature of the subsidisation programme, subsidies are easy to administer; they allow for self-targeting, with low leakages[40]. Finally, subsidies allow for consumption of commodities where markets for them are inadequate, for example in situations of droughts where crop production is either significantly reduced or fails.

However, implementation of subsidies, particularly in PCEs, is fraught with problems. First, subsidisation requires significant investment of resources. It can be claimed that to make them more cost-effective, subsidies could be targeted to certain commodities and selective groups of the population. This could make implementation and monitoring more complex and therefore costlier. Related to this is the second disadvantage of subsidies: in most PCEs, planning and implementation of subsidy programmes is not easy. Capacity shortages imply a restricted menu of subsidy reform options to choose from. In addition, implementation may be inflexible since administrative capacity may not be sufficiently dynamic to monitor progress and adopt necessary changes that could enhance programme performance. Further, fiscal systems in PCEs may not be sufficiently developed to allow for interventions such as tax cuts. Third, subsidies may not be the most effective safety nets. Coady (2004) finds that food subsidies are not very effective in transferring resources to the poor and are accompanied with high efficiency costs. Targeted food subsidies, while in theory may be more effective, in practice they are fraught with high leakages to the non-poor and there are high costs associated with distribution and corruption. In addition, their success crucially depends upon the resources allocated to targeting of the poor and vulnerable households. Fourth, subsidising certain commodities may lead to crowding out private market initiatives and competition. This could result in distort production and consumption incentives. Finally, subsidies tend to get entrenched in state support systems and are politically and administratively difficult to phase out.

[40] Alderman (2002) has summarised country experiences examined by Subbarao et al (1997), Kennedy and Alderman (1987) and Mateus (1983), to conclude that in 11 out of 15 cases, leakages range from negligible to low.

While subsidies have the potential to enhance entitlements, their impact is limited to certain targeted entitlements. This restricts household freedoms to choose entitlements that they deem necessary for their own well-being. In terms of reducing exposure to risk, the limited effectiveness of subsidies lasts only as long as the transfer itself, which can create a culture of dependency on public finances. Subsidies do not generate significant second round benefits for households and individuals, making it difficult for them to protect their livelihoods against uncertainties and to promote their livelihoods.

2.2.2. Food Based Safety Nets

Rogers and Coates (2002) have summarised the key advantages and disadvantages of food based safety nets. These are used to support consumption requirements, either related to the direct provision of food or through cash-like instruments such as food stamps and coupons. Food related aid is viewed as in-kind contribution to the household income and purchasing power. Such aid is usually disbursed to the women and since women control food provision within the household, food based safety nets tend to increase net food consumption at the household level. These measures are particularly relevant in situations where food supplies are disrupted, for example because of famines or war and breakdown of infrastructure. Food based safety nets are usually implemented on a self-targeting basis. This ensures minimal leakages because often the quality of food is inferior and only the most vulnerable would access such aid.

The most common types of food based transfer programmes are supplementary feeding programmes, food for work and food stamp programmes. Supplementary feeding programmes are targeted to specific categories of individuals and households and include programmes such as child and school feeding. Such programmes help improve nutritional needs of specific groups within the population affected by shock. Food for work programmes help undertake public works in exchange for food distribution, thereby achieving the twin objectives of food security as well as infrastructure rehabilitation. Food stamps can be used to purchase food and can be denominated either in terms of value or quantities of specific food types.

In post-conflict environments, the effectiveness of food based safety nets is limited. In the immediate aftermath of conflict, food aid is not sufficient to meet the diverse needs of the vulnerable poor. Post-conflict environments usually do not have the capacity to target supplementary feeding programmes to the needy. Even when such programmes are effectively targeted, they help satisfy food needs of a specific category of the population. Food for work programmes are useful in terms of infrastructure rehabilitation but the food received in exchange of work done is usually sold in local markets, thereby crowding out local production. Food stamps and coupons can be exchanged for other amenities such as cash, which is important but does not help achieve the objective of consumption smoothing. Depending upon implementation modalities, food based safety nets increase reliance on hand outs and exacerbate the problem of benefit dependency. Most importantly, vulnerability is the result of diverse losses, food security being only one of them. Food based safety nets therefore help redress only a fraction of vulnerability. Such programmes give access only to a very specific type of entitlement and do not increase the freedom to convert this entitlement towards a functioning.

2.2.3. Cash Transfers

Cash transfers involve the provision of assistance in the form of cash to the poor and are effective as risk mitigation as well as coping strategies. They are increasingly being used in developing countries in the form of cash given to individuals and households, or through as cash grants, cash-for-work and voucher programmes and as an alternative to in-kind transfers such as food-aid distribution (Harvey 2005). Cash programmes have a number of advantages. They are successful in reducing poverty of specific groups (CPRC 2007). In Senegal and Tanzania, old-age and disability benefits have the potential to not only improve living standards of specific recipients but also other members within the household since benefits are shared (Gassmann and Behrendt, 2006). They are relatively more cost-effective compared to in-kind benefits such as distribution of locally purchased or imported food aid (Adams and Kebede, 2005, Peppiatt, Mitchell and Holzmann, 2001). From the point of view of the beneficiary, cash transfers increase individual and household freedom to choose the type and standard of entitlements to be purchased. Less time is spent collecting the entitlement, there is no value loss when trading cash for other entitlements and cash transfers allow households to make strategic

investments such as purchase of livestock or share-cropping arrangements. In addition, there is evidence to suggest that cash transfers result in a multiplier effect through cash injection in local economies (Adams and Kebede, 2005, Peppiatt, Mitchell and Holzmann, 2001).

Nevertheless, there are significant challenges that diminish the efficacy of cash transfers in addressing development needs. Questions exist about the cost-effectiveness and sustainability of cash transfers (Handa and Davis, 2006, Kakwani, Soares and Son, 2006). It is argued that money that is transferred to deprived households can create consumer price inflation, which is experienced by all households including the chronically poor. Because explicitly targeting the transfer to such households is difficult, the inflation can reduce well-being (Adams and Kebede, 2005, Harvey 2005, Peppiatt, Mitchell and Holzmann, 2001). There is also evidence to suggest that cash transfers increase dependency upon the state and may adversely affect incentives to supply labour (Tabor 2002, Holmes 2009).

There is growing literature to assess the relevance of cash transfers in post-conflict and post disaster environments that finds that cash and voucher based reconstruction policies are successful in their impact (Harvey 2006). While analysing cash transfers in Nepal and Somalia, Holmes (2009) argues that the most important advantage of cash transfers is that they help garner political legitimacy and prevent a resurgence of conflict. Mattinen and Ogden, (2006) also draw similar conclusions by analysing cash-for-work programmes in Somalia, specifically highlighting the positive impact such programmes have in stimulating community participation and development. In addition, the work done through these programmes helped improve access to water for beneficiary communities. Doocy et al (2006) analyse cash-for-work programmes in Aceh to determine that they boost household incomes.

Despite these successes, it is difficult to monitor how the transferred money is used. For example, Willibald (2006) analyses assistance packages for ex-combatants and points out that there is a possibility that cash transfers are used to fuel terrorist activities but this is difficult to establish because of insufficient monitoring. Further, while cash transfers allow individuals and households greater choice, in post-conflict environments, where markets are weak, questions are raised about the extent to which money is, in fact, fungible. Most importantly, questions still exist about the extent of impact

such programmes have (Farrington and Slater, 2006). There is strong evidence to suggest that cash transfers do provide temporary relief in post-conflict and disaster environments for the chronically poor but it is not clear whether they can provide longer term sustainable development.

One way to address these problems is to make the cash transfer conditional upon certain actions. These are usually related to development of children such as school attendance, food consumption, attendance at health and nutritional clinics etc. (Janvry et al, 2007, Barrientos and DeJong, 2006)[41]. However, even conditional cash transfers can be inefficient; the action upon which the cash transfer is contingent should be available. For example, cash transfers, conditional upon school attendance assume the availability of schools. In many cases, implementation of such programmes requires implementation not just of the cash transfer but also of the service that is being delivered. To be successful, these programmes rely on extensive monitoring to ensure that the conditions of cash transfer are being met. Many developing countries do not have the capacity to undertake such monitoring.

A specific problem encountered when implementing (conditional) cash transfers in post-conflict environments is the priorities that determine reconstruction. Post-conflict reconstruction relies heavily upon funding from external actors such as multi-lateral donors. The conditions that donors provide funds for, may or may not reflect the needs of the people affected by the conflict, rather the political commitments of donor organisations.

The effectiveness of these safety nets in reducing post-conflict vulnerability varies depending upon the nature of the intervention being considered. Table 1 summarises the nature of impact a particular safety net would have on reducing post-conflict vulnerability.

[41] Schubert and Slater (2006) argue that the knowledge of the impact of conditionality has not been explored in the current literature and is not precisely known. When comparing conditional cash transfers in Africa and Latin America, they argue that the contextual differences between the two environments, the capacity to implement and the cost-benefit ratio of the conditionality may make the introduction of conditional cash transfers in Africa inappropriate. They further point out that a key to the success of such programmes is the availability of the service upon which the transfer is conditioned and the political will to bear the costs of such programmes.

Table 1: Safety Nets and Post-conflict Vulnerability

	Internal defencelessness	**External defencelessness**	**Vulnerability**
Subsidies	Facilitates access to specific entitlements indirectly	Distorts incentives; exposure to risk remains high	Very limited impact on reducing vulnerability
Food based safety nets	High for food entitlements but not for multidimensional entitlements	Specific second round benefits only in case of food for work programmes	Limited impact on reducing vulnerability
(Conditional) cash transfers	High for multidimensional entitlements	Emphasis is on provision of temporary relief; achievement of longer term goals of development depends upon the context in which they are implemented	High impact on reducing vulnerability

These safety nets either have a limited impact in reducing post-conflict vulnerability or their impact comes at such a high cost that their implementation implies inefficient resource allocation. Subsidies enable households and individuals to gain access to specific entitlements only and this is not helpful considering vulnerability is caused by multi-dimensional losses. Subsidies have a high potential for leakages and distort price incentives. They do not offer second round benefits that would help reduce household and individual exposure to risks thus perpetuating external defencelessness. Food based safety nets ensure access to one specific type of entitlement: food. Their potential for second round benefits, is restricted and only in the case of food for work programmes do they reduce exposure to risk. However, households and individuals tend to trade food aid for other commodities that artificially increase the supply of food in the local market thereby reducing prices for local farmers. Cash transfers, whether conditional or unconditional, do enable households to increase their level of

multi-dimensional entitlements. In terms of reducing exposure to risk, evidence shows that such programmes have a temporary benefit and longer term impact varies, depending upon the context in which these programmes are implemented and the specific programme design. Gains from these programmes come at a high cost that results in inefficient resource allocation. Most importantly, modifying these policies to suit the evolving needs of post-conflict environments is not easy due to high costs of transactions and limited capacity. Nevertheless, compared to subsidies and food based safety nets, particularly conditional cash transfers ensure greater multidimensional entitlement gains and imply reduced exposure to risk in those sectors that the transfer is conditioned upon.

To summarise, safety nets implemented for post-conflict reconstruction should help reduce vulnerability (by increasing entitlements and reducing exposure to risks). In addition, safety nets should be designed in such a way that they do not encourage benefit dependency, rather they may reflect the needs of the vulnerable poor. They should be sufficiently flexible to respond to evolving needs of PCEs. Most importantly, they should be efficiently designed in such a way as to capture economies of scale and be cost-effective.

This chapter examines how workfare programmes, as an example of conditional cash transfers, help achieve these aims. It studies the case of the National Emergency Employment Programme (NEEP)[42] in Afghanistan. The following section provides a brief background on the evolution of the programme while the subsequent section analyses its impact. However, before the example of NEEP is discussed, the next section briefly defines workfare programmes and their relevance in post-conflict environments.

3. Workfare Programmes: Concept and Design

3.1. Defining Workfare

Workfare programmes include all employment and/or labour-intensive, public work-type programmes (Keddeman 1998). They make income transfers in return for work done, implying low information and

[42] Subsequent to a review conducted in 2004, the programme was renamed National Rural Access Programme (NRAP). This will be discussed in detail in subsequent sections.

uncertainty costs. Such programmes have been used effectively across the world to mitigate effects of shocks such as famine, economic depressions, post-World War II reconstruction and others related to agricultural vagaries. Workfare programmes have been important as counter-cyclical programme interventions in developed and developing countries. In developing countries, workfare programmes were initiated as "food for work" as a mechanism for channelling food aid to the poor. They have been particularly significant in mitigating the negative effects of climatic and systemic risks on poor farmers and unskilled and semi-skilled workers.

Workfare programmes have at least three distinct impacts[43]. First, workfare programmes achieve the objective of *income transfers* in return for services provided by those employed. Evidence from South Asia, Africa and Latin America suggests that the distribution of income gains from workfare programmes is decidedly pro-poor, a success that is achieved through the self-targeting feature of the programme[44]. Second, in order to deliver benefits, implementation of workfare programmes ensures participation of the beneficiary population, thereby *improving and strengthening access to institutions*. This is important where local communities help in the planning stage, or it could be minimal wherein the benefit flow is one-sided and the government does not include the beneficiary population in planning and resource allocation, thereby increasing ownership. In doing so, the implementation of public works programmes makes governance institutions more responsive to the needs of the people. The third advantage of workfare programmes is to *create much needed infrastructure*. Particularly useful in post-conflict environments, this objective is useful since it allows for the quick rehabilitation/reconstruction of much needed communications and land development infrastructure[45].

[43] These have been exhaustively analysed in a special issue of the International Labour Review published in 1992. Key articles include Gaude, J. and Miller, S. and Gaude, J. and Watzlawick, H.

[44] Although in some cases as discussed below, this objective may not be achieved from the outset.

[45] Guhan (1994) highlighted that social policy in developing countries should be such that it protects individuals and households against deprivation, prevents a fall in individual and household well-being and promotes livelihood generation. Kabir (2002) took this idea forward and suggested that social policy should allow households to achieve a continuum of goals: immediate needs that emphasise survival and security to long-term goals, which stress upon self-reliance and accumulation. The three categories of impact, attributed to workfare programmes,

In post-conflict countries, in addition to the impacts highlighted above, workfare has the added benefit of being flexible. Workfare programmes can be easily modified to adapt to the changing needs of the population. Such evolution can be seen in Table 2. In the initial aftermath of conflict when needs are of an emergency nature, workfare programmes have a short-run time horizon where the focus is on cash transfer to local areas. As the emergency ends and development needs become more comprehensive, the time horizon of workfare programmes becomes long-term, with a focus on institutional and infrastructure development first and cash transfers secondary.

Table 2: Evolution of Workfare Programmes

	Public Works	**Workfare**
Goal	Welfare	Development
Terminology	Labour-INTENSIVE public works	Labour-BASED public works
Objectives	• Livelihood protection • Consumption smoothing through emergency cash injection	• Livelihood promotion • Income enhancement through creation of sustainable infrastructure
Impact	Poverty alleviation	Poverty reduction
Time frame	Short-term immediate impact	Long-term sustainable impact
Rationale for intervention	Emergency relief	Sustainable infrastructure creation and maintenance
Coverage	Wide to MAXIMISE employment	Narrow to OPTIMISE employment
Targeting mechanism	Self-targeting and job rotation	Community targeting and means testing
Wages	Fixed at below the market wage	Based on productivity norms and not connected to market wage

make them ideally suited to achieve these policy objectives not just in post-conflict environments but also in developing countries.

Mode of payment	Periodic (daily, weekly or fortnightly)	Piece-meal and lumpsum payments
Nature of infrastructure	Secondary concern	Primary concern
Benefit incidence	Project participants	General community

Source: Adapted from Devereux (2002)[46]

Before entering into a discussion about the relevance of workfare programmes in post-conflict environments, workfare programmes have a number of features that make them a significant instrument of development. The next section discusses these.

3.2. Design and Implementation

Smith and Subbarao (2003) contend that the effectiveness of safety net programmes depends upon three factors: availability of information to ensure appropriate coverage and targeting, simplicity of implementation so that management of the programme is straightforward and lean; and, affordability, which is relevant when allocating scarce public funds in post-conflict environments.

Targeting: The requirement for efficiency given fund constraints necessitates directing funds to those vulnerable poor who are in most need of support, hence the need for targeting. This has two aspects. First, money should be directed towards the areas where there are concentrations of the poor through geographical targeting or poverty mapping; and, second, within these areas, the poor should be selected for the benefit, in this case, employment.

The first step towards targeting money to the poor entails identifying pockets of the poor, or geographical targeting (Coady, Grosh and Hoddinott 2002). Also known as poverty mapping, the approach is preferred for a number of reasons, of which at least three make this form of targeting relevant when implementing workfare programmes in post-conflict environments (Bigman and Fofack 2000). First, where other information related to household characteristics is unavailable or expensive to collect,

[46] Devereux's original distinction is made between workfare and fair work. In this research, the term workfare programmes is used to describe what Devereux has called fair work.

geographical targeting, usually based on indicators developed using data from surveys or census information, is an effective starting point. In this way it has relatively little influence on the behaviour of households. Second, it is easy to implement since it is administratively not cumbersome and implies transparent fund allocations based on indicators and not the discretion of policy makers. Third, where the kind of intervention being proposed includes more than income transfers to people, geographical targeting is useful. Examples of such interventions could be provision of public health, education, infrastructure, financial services etc. In post-conflict environments, the rationale for workfare programmes comes from the fact that they combine income transfers with infrastructure rehabilitation/reconstruction in areas where this has been destroyed by the war, hence the need for geographical targeting.

Coady Grosh and Hoddinott (2002) summarise three situations in which geographical targeting should be used. First, this technique is relevant when poverty is highly spatially correlated, or, in this case, where the impact of conflict has been strongest. Second, such methods can be used where the benefit is not an income transfer or is of an everyday use[47]. Third, this method should be used where other methods of targeting are unfeasible, especially due to data and administrative capacity constraints.

However, they also caution that for a number of reasons, geographical targeting should be combined with other forms of targeting. First, as is obvious, geographical targeting is a way of identifying pockets of the poor, not the poor themselves. It provides no indication on how funds should be distributed between individuals in one area. Second, such forms of targeting are more susceptible to concerns of politicisation and corruption in that politicians may prefer to allocate resources to highly populated areas from where they draw their electoral strength or allocate more funds to their constituencies, leading to inequitable growth.

The second aspect of efficient targeting of individuals and households through workfare programmes depends crucially upon the labour that is employed and one way of selecting this labour is through self-selection. By setting the wage rate below market wage, workfare programmes try and

[47] They cite the example of subsidies on tortillas in Mexico. Since these need to be purchased everyday and should be fresh, it is difficult for people to travel from one region to another for their purchase.

ensure self-selection. This saves administrative costs in implementing complicated targeting measures and also ensures that there is no adverse selection; only the poor will take up the employment offered at this wage rate (Ravallion 1991[48]). There are at least three problems with this assertion. First, in order to ensure that the self-targeting mechanism works, the wage has to be set sufficiently lower than prevailing market wages for unskilled labour. At this rate, the programme would successfully attract the poorest most vulnerable workers but the wage rate would be so low that the transfer benefit would be most likely negligible. The dynamics of wage rates will be discussed further in sub-sections. Second, if poorly designed, implemented and monitored, it can lead to detrimental inclusion and exclusion errors; the first relates to inclusion of workers who may be above the poverty line and who take advantage of an easy employment opportunity. Exclusion errors are more critical since they measure the number of people who should have been targeted by the policy but were not able to participate due to structural factors. Often, identifying reasons as to why this group does not participate is difficult, since it is not easily accessible to monitors. Finally, disadvantage of relying on self-targeting is, as Acharya (1998) points out, that it excludes non-wage factors for labour supply such as gender, age, handicaps, religion, culture, education, location and agricultural seasonality.

Devereux (2002) has summarised three other methods of targeting, commonly used for selection of beneficiaries. Another way to target the needy populations is means testing, where beneficiaries of a particular policy are selected through indicators of poverty as a proxy for need. These could be categorical such as status of employment or they could be continuous such as per capita income. Compared to self-targeting, this method is accurate and precise. Nevertheless, it is extremely difficult to implement in practice for at least two main reasons. First, it is very difficult to ascertain household income and asset levels. Second, this method leads to perverse behavioural outcomes since households purposely change their economic situation to be able to become a project beneficiary.

A third mechanism for beneficiary selection is job rotation where the maximum time spent on a particular employment by one worker is limited, after which they are replaced by other needy members of the community.

[48] Polly Jones also discussed this issue when analysing the TRABAJAR Programme in Argentina

This method ensures maximum coverage of needy households and the poor groups of the population. It does however, create opportunities for rent seeking, bribery and corruption. In this way, leakages can still occur through rent seeking. This problem can be especially severe in the developing country context where sources of accountability of local implementing bodies are very low.

The fourth mechanism, community-based targeting measures are becoming increasingly popular and imply a greater participation of the community in the entire policy cycle, from policy identification and policy implementation to policy monitoring. Usually such methods work on two levels: first, in identifying needy communities, they allow geographical fund allocation; and, second, within a community, such methods allow for the identification of the most needy and vulnerable people that will benefit from a particular policy intervention. Sharp (2001) suggests that community targeting mechanisms can be effective since community members are best aware of the economic status of each other and also of the interacting causes of vulnerability. Moreover, such methods effectively promote participation in and ownership of a particular policy. Sharp also points out a number of drawbacks of this targeting mechanism: like job rotation, community targeting can be easily co-opted by the community elite causing rent-seeking and corruption. However, if conducted in a participatory manner, involving the entire community, co-optation is not likely since members can hold each other accountable. A more critical disadvantage is the difficulty in standardising targeting techniques across communities. Moreover, often although the community may be geographically agglomerated, it may not be sufficiently homogenous to classify as a community.

While targeting, there is a trade-off between achieving maximum coverage (horizontal efficiency) and concentrating benefits (vertical efficiency). These can be dichotomous when working with a budget constraint: the intent to cover the designated people may be achieved, but the intervention itself may not be very valuable. The coverage can be achieved through self-targeting schemes, though self-targeting techniques in some contexts can lead to inefficient outcomes. To overcome this problem and to increase ownership of a particular scheme, local-level resources can be utilised such as involvement of local-level governance structures.

The cost effectiveness of workfare programmes is inextricably linked to the targeting efficiency as well as the management of the programme. Costs depend upon programme features as well as design features; the former relating to the wage rate and timing of activities while the latter relates to implementation.

Design: When designing effective workfare programmes, at least four design considerations have to be taken into account. These include wage rates, timing, approaches towards labour utilisation and labour intensity. Wage rates on the programme need to be sufficiently low, below prevailing market wage for unskilled labour, so that only those who are really poor and needy will seek employment in the programme. This achieves the self-targeting objective that makes workfare programmes so special. However, as mentioned above, in some instances, self-targeting is not the most effective means of targeting and other methods must be used. Setting a wage rate at a very low level has another impact that of reducing total income transferred. It could also be that at that low wage, the opportunity cost of employment is sufficiently high in terms of displaced labour at home or in an alternative source of employment that workers prefer not to work on the programme. However, when trying to assess the opportunity cost of the time provided by workers in two villages in India, Datt and Ravallion (1992) find that in one of the two villages they studied, Shirapur, 80 percent of the labour employed on the scheme was unemployed labour while only 20 percent was displaced from farms. In this case they found the opportunity cost of labour to be low. In the case of the other village, Kanzara, majority of the labour employed on the programme is displaced from wage labour, thereby increasing the opportunity cost of labour. They also found that, despite the high opportunity costs, net income transfer was positive. Jalan and Ravallion (1999) found the same for Trabajar in Argentina and Teklu (1994) for Tanzania. Keedman (1998) has conducted an extensive review of workfare programmes, which corroborates this notion, though he does conclude that this performance can vary depending upon the nature of alternative employment opportunities available.

This performance is crucially dependent upon the timing of programme activities. Subbarao (1997) points out the case of the JRY in India, where as much as 55 million labour days of employment were provided in the off-peak season, leading to considerable "consumption smoothing" benefits. Particularly in cases where alternative sources of income are from non-farm

sources, the opportunity cost of employment on workfare programmes is high. This is noteworthy because this has implications for the stabilisation impact of workfare programmes: if activities are successfully implemented in off-peak seasons, income stabilisation effects are greater (Walker et al 1990, Ravallion 1990). Off-peak transfers are high and enable participants to save money for more high return activities, thereby having what Devereux (2002) calls an income enhancing effect, which is more sustainable. In some cases though, it is difficult to implement programmes in off-peak seasons due to structural reasons such as weather constraints that may prevent agriculture but also restrict construction possibilities.

The timing of workfare programmes also has implications on behavioural responses. If implemented in the peak employment seasons, they can lead to a dependency or provide disincentives to supply labour in the market. However, if timed accurately in the lean seasons, such adverse incentives do not come to pass. As Datt and Ravallion (1992) find in the case of the JRY in India, the net transfers from such programmes remain positive and of the same magnitude as an un-distorting allocation.

Timing of activities also has implications depending upon the competition from other employment related activities. If implemented in peak agricultural seasons, when competition from other employment activities is high, wages paid on workfare programmes would perhaps need to be high as well to attract workers. Resultantly, not only is it possible that the workers attracted to these programmes are not the poorest and most vulnerable but also that the higher wage would inflate the overall wage bill leading to cost inefficiencies.

It is important to distinguish between labour-intensive programmes and labour-based programmes (Devereux 2002). Labour-intensive programmes maximise short-term employment creation, usually as a response to a crisis while labour-based programmes optimise employment to focus also on the secondary objective of asset creation, thereby making the programme more sustainable. This distinction is significant as it has differing implications for the impact on poverty alleviation: through cash and/or in-kind transfers, or, through the creation of productive economic infrastructure or both. The choice of a suitable design depends on the objective of the policy intervention: are public works to be used as safety nets (immediate relief, welfarist function) or are public works for infrastructure creation

(development function) (Devereux 2002, Smith and Subbarao, 2003). While this distinction presents a trade-off between asset creation and employment, provision of one does not necessarily crowd out the provision of the other.

The choice of labour-intensive versus labour-based construction techniques determines labour intensity as well as the mode of payment. A crude estimate of labour intensity is the cost of labour as a proportion of total costs. As more labour is used in preference to capital, this share would increase as would labour intensity. However, labour-based methods do not necessarily entail using more labour in place of capital, rather where labour is adapted appropriately to suit the skills (or the lack thereof) of the workers as well as the needs to construct robust infrastructure. In doing this, labour is also made to complement capital. Using labour-based technologies also allows for a more flexible mode of payment. Rather than daily payments, labour can be paid on a piece meal basis. In determining labour-based appropriate technologies, the component tasks involved in constructing infrastructure are broken down in their components and the per unit labour requirements for each task are determined. Labour payments are based on this calculation. Using labour-based appropriate technologies also allows for a more flexible approach towards work. Labour can work as much as they opt and be paid according to their levels of productivity.

Implementation: Keefe (2005) highlights three models of implementation, each with its specific institutional roles and responsibilities.

The first is the social fund model wherein a special purpose institution outside regular government structures develops, implements and monitors the programme. This mode ensures that programmes remain demand-driven. It has been common in Latin America and Sub-Saharan Africa. Through this mode of implementation, communities submit ideas for projects to social funds, which are then screened for cost and technical viability. Since technical capacities at the local-level are low, this mode requires significant involvement of private contractors, who typically use capital intensive modes of implementation, reducing demand for labour (Stock and de Veen 1996). Moreover, as Smith and Subbarao (2003) suggests, the works implemented through these programmes are small and cannot therefore be compared to the larger nation-wide programmes implemented in countries such as Chile, India, Korea, Indonesia or Argentina.

The second is through the regular government structures, with a strong role for public works organisations and related line agencies/ministries; this mode has been used notably in India, Argentina and Bangladesh. Comparing these two schemes reveals that in order for programmes to be successfully implemented through the government, programme objectives and implementation guidelines have to be clearly specified not just to the implementers but also the beneficiaries. Moreover, the link between the Centre, which oversees the allocation of funds, and the local-levels where the funds are utilised, needs to be clearly established. In India, where such transparency does not exist and tasks are not clearly specified, implementation experience reveals that although fund allocation is proportional to the poor population within the province, labour selection has often been co-opted by elected officials at the village levels. In Argentina, where implementation guidelines are carefully planned and transparent, not only is fund allocation proportional to the numbers of poor but there is better accountability at each level, ensuring minimal leakages. In addition, monitoring and assessments of the programme have been continuous and on-going. This helps highlight implementation bottlenecks. Despite mixed implementation experiences, two factors that remain common in government implementation are the use of private contractors for construction, which implies more capital intensive modes of construction; and, delays in payments. Also, in countries where government capacity is weak, implementation of programmes stretches these resources. This means that not only is there insufficient coverage but also, the meagre coverage is not exhaustive.

The third mechanism is a sort of mixed implementation, with public financing and a strong role for communities in proposing, implementing and monitoring projects. This mode has proven to be most effective in being responsive to the needs of beneficiaries and in generating economies of scale. A mixed implementation combines the advantages of pure government intervention as well as implementation through social funds, leading to efficient utilisation of resources. In areas where self-targeting may not work in soliciting the poor, mixed modes of implementation are useful in identifying eligible beneficiaries so that less funds need to be allocated to elaborate targeting measures. In post-conflict environments, the implementation mix could include non-governmental (NGO) and international organisations (IOs). This may increase bureaucratic

inefficiencies, but generate benefits such as greater coverage, use of labour-based techniques as well as timely payments.

One important consideration that influences implementation is the source of funding. In countries such as India and Argentina, where programmes have been implemented using indigenous sources of funding, they have been better embedded, thus having a more long-term impact. Workfare programmes implemented through external donor funding, extensively used in Africa and parts of South Asia, are usually of short duration, providing immediate relief; in most post-conflict environments, the need is for ongoing and continuous support, which if not provided, will perpetuate uncertainties. Moreover, short-term funding is coupled with quick implementation without much emphasis on the quality of asset creation and the level of capacity building and skill transfer. This can be problematic in post-conflict environments where these two are immediate development needs. Such hurried implementation may also crowd out community participation, reducing ownership. This leads to reduced management and maintenance of assets created (Teklu 1994, Smith and Subbarao 2003). Nevertheless, post-conflict environments are characterised by a paucity of resources, which necessitates the use of donor funding. In this case, care must be taken that programmes are designed effectively to ensure that the impact of the concerns highlighted above is minimised.

Cost effectiveness: The cost effectiveness of workfare programmes depends upon the combination of targeting, the programme design and the implementation mechanism. The nature of targeting determines the extent to which wage rates are successful in ensuring self-targeting and the extent to which the use of other targeting measures is necessary. Programme design influences the extent of income transfers, which are determined by the wages paid and level of labour intensity and the efficacy and potential for second round benefits of infrastructure that is created through the programme. The mode of implementation determines the administrative costs.

Ravallion (1999) has provided indicators to measure these costs. These include budget leverage i.e. the co-financing, which governments would require from other non-governmental sources to implement the programme. Labour intensity – this represents the total wage payment, both to the poor and the non-poor as a share of the expenditure outlay. Targeted labour

earnings represent the payments to the eligible poor as a share of the total expenditure outlay. Net wage gain represents the share of the gross wage received by the poor after subtracting all costs of participation (opportunity costs), represented as a share of the total wages received by the eligible participants. Indirect benefits denote all the indirect benefits to the poor such as the infrastructure that is created through the programme. Where a mixed mode of implementation is adopted, indirect benefits would also include the institutional wealth that is created: the institutions that are established or strengthened in the process of implementation.

While it is recognised that these indicators are crude estimators of the costs and benefits of the programme, they provide an effective starting point to understand the concepts being considered.

The above is a summary of the literature surrounding key aspects of workfare programmes. To understand their relevance in post-conflict countries, it is important to understand how workfare programmes help reduce post-conflict vulnerability.

3.3. Workfare Programmes and Post-conflict Vulnerability

Workfare programmes have a primary as well as secondary impact. The primary impact results from income transfers while the secondary impact results from creation of infrastructure and institutional development. Table 3 attempts to relate this impact with post-conflict vulnerability. Post-conflict vulnerability is defined as the combination of exposure to risk and lack of entitlements. The former encapsulates uncertainty about the future while the latter refers to reduced resilience against the uncertain future.

Table 3: Workfare Programmes and Post-conflict Vulnerability

		Components of Vulnerability	
		Exposure to Risk	Lack of Entitlements
Impact of Workfare	Primary	Income transfer stabilises fragile incomes at least in the short run	Income transfer enables households to increase overall entitlements
	Secondary	• Poverty Reduction through infrastructure development • Implementation	• Access markets and social services helps increase entitlements • Stronger institutions

		arrangements help strengthen institutions and increase both accountability as well as ownership in the reconstruction process	increase social capital

It can be postulated that like other safety nets the extent to which workfare programmes contribute towards reducing vulnerability is limited. However, unlike other safety nets, they do not encourage benefit dependency since income transfer is linked to work done. The nature of work, infrastructure rehabilitation, is clearly specified and is an urgent need of post-conflict environments. The relative flexibility of implementation design makes it easier to adapt such programmes to the evolving post-conflict needs. The next section highlights the implementation experience of Afghanistan's national workfare programme in reducing vulnerability. The aim is to determine broad categories of impact that can subsequently be explored in detail.

4. Evolution of Workfare in Afghanistan

Post-conflict Afghanistan has characteristics similar to other post-conflict environments. Moreover, aid inflow has been mis-directed due to lack of capacity. Even-though needs have been correctly identified, addressing them has been difficult. Emphasising certain reconstruction priorities over others has led to uneven development, which has increased frustrations of not only the agencies involved in reconstruction but also the Afghan people.

This context is important to understand the evolution of NEEP. This section begins by highlighting the initiation of reconstruction in Afghanistan subsequent to the culmination of the conflict in 2002.

4.1. Background: Emergence of AIA

The collapse of the Taleban regime in November 2001 was officially hailed as the end of almost 30 years of war in Afghanistan. This was followed by the Bonn Agreement, which was concluded on December 5, 2001. The Bonn Agreement led to the Agreement on Provisional Arrangements in Afghanistan until representative government institutions were established.

This resulted in the instatement of the Afghan Interim Administration (AIA), which took command of Central Administration on December 22, 2001. Headed by Hamid Karzai, the AIA consisted of specific departments that dealt with all issues related to Afghanistan. These included, foreign and interior affairs, commerce, finance, mines and industries, information and culture, communication, labour and social affairs, haj, martyrs and disabled, education, higher education, public health, public works, rural development, urban development, reconstruction, transport, return of refugees, agriculture, irrigation, justice, air transport and tourism and border affairs.

Afghanistan's history of war was only one of the many problems that plagued Afghans. Rural infrastructure was destroyed and sources of livelihoods were diminished. Arable land, which has always been about 25 percent of area, was reduced because of destroyed irrigation facilities. To compound factors, Afghanistan suffered from long and protracted drought, which left natural resources severely depleted. Livestock, which was a traditional source of livelihood in Afghanistan had been depleted. The war itself had led to complete economic collapse and a big political vacuum. Migration was high not just of skilled labour but also of unskilled manpower that escaped to neighbouring countries. The status of women, almost 51 percent of Afghan population, was unspeakable; they were excluded from all aspects of life. Education levels were low. Trade – the historical basis of the Afghan economy, was non-existent because trade routes had been destroyed.

In this context, expectations from the AIA were high, not least because of the support extended by the international community. Rural populations that had suffered historically in Afghanistan expected the AIA not only to deliver a high peace dividend but also to strengthen local governance and promote development aimed at reducing poverty, vulnerability and increasing social cohesion in the country. This was evident from the AIA's stance on reconstruction. Reconstruction activities would aim to implement a local empowerment programme that would allow communities to manage their own resources. Such a programme would allow legitimate leaders to emerge and deal with the needs of the communities they represent. This was to form the basis of consultative democracy in the future. Block grants were to be distributed to villages and districts and allocated to projects through inclusive and participatory processes.

There are two key aspects of the 'mission statement' that are noteworthy. First, for the first time in the history of Afghanistan, a conscious effort was made to connect far-flung rural areas with the Centre. This represented the commitment of the AIA to reduce poverty and develop the whole country. Second, this approach was ideal to garner political legitimacy. Thirty years of war had made rural populations complacent and they were leading their life from one day to the other without concern for the many changes occurring in the Centre. The AIA's approach sought to increase awareness amongst these communities about the new government in the Centre with the aim to gain much needed political support. This political legitimacy leverage was especially relevant because it helped extend control over regions, which had hitherto been managed by warlords.

4.2. Formulating the NDF

To concretise their vision, the AIA proposed a National Development Framework. The process of formulating the NDF was initiated in March 2002 when the AIA invited a joint donor mission to Afghanistan. This mission included representatives from the Asian Development Bank, European Community, The World Bank, the United Nations Development Programme, the United Nations International Childrens' Emergency Fund and the United Nations High Commissioner for Refugees. During dialogues that were held in this review mission, various stakeholders were consulted. A key finding was to devise a national 'single window' framework for channelling support to communities through public transfers. This approach would allow for the inclusion of smaller bilateral donors, non-governmental organisations as well as provide a systematic approach for governmental budget support to increase sustainability.

In concrete terms, the mission identified four key reconstruction priorities. First, sectoral activities would aim to respond to community needs as well as strengthen government line agencies particularly in terms of establishing sectoral objectives, normative standards and regulatory capacities. Second, due to low government capacity, international and local NGOs would be actively involved in the provision of a broad range of basic services. NGOs have had extensive experience of delivering services in Afghanistan in sectors such as rural development, sanitation, health, education, energy and business support. To this end, approximately US$ 125 million would be

channelled through NGOs by 2004. Third, humanitarian relief efforts would continue to address the needs of the vulnerable as well as the internally displaced persons and the returning refugees. The key players for this would be the World Food Programme, UNHCR and the International Organisation of Migration (IOM). These organisations had already been working in Afghan refugee camps in Pakistan and Iran. Fourth, short-term public employment programmes would be initiated for rehabilitation canal maintenance. These programmes would provide immediate cash to participants, thereby kick-starting local economies, at the same time rehabilitate much needed infrastructure for development.

Concurrent with this, on June 13, 2002, an emergency Loya jirga (Grand Council) consisting of tribal elders was convened in Afghanistan, that discussed the establishment of the Transitional Islamic State of Afghanistan. The elders resoundingly backed the presidency of Hamid Karzai, who subsequently established his cabinet with 28 individual ministries. TISA was replaced by the Islamic Republic of Afghanistan after the presidential elections that took place in October 2004, which legitimised Karzai's government and his cabinet.

This process is relevant because it coincided, at least in terms of political motivations, with the emerging needs of Afghanistan. It heralded the shift from emergency to reconstruction to sustainable development. This is significant because although the reality on the field did not really change, the government approach towards the reconstruction process changed considerably, many would contend, for the worst.

In order to respond to the priorities identified in the NDF and subsequently upheld by the TISA, three key projects were identified: the Emergency Public Administration Project, the Emergency Education Rehabilitation and Development and the Emergency Community Empowerment and Public Works Programme (ECEPWP). NEEP was implemented as part of the last programme.

4.3. Workfare in Afghanistan

At the Tokyo meeting in 2002 the AIA presented a vision for the development of Afghanistan, which emphasised local empowerment and enabling communities to manage their own resources. The aim was to allow

legitimate leaders to emerge to form the basis of consultative democracy. Block grants would be distributed to villages and districts and allocated to projects through participatory processes. To make this process cost-effective, the aim was to establish a national 'single window' framework for channelling public transfers.

As the name suggests, ECEPWP consisted of two parts: community empowerment and public works. The objectives of the community empowerment programme were three-fold: to support participatory planning through strengthened local governance structures, to help villagers rebuild their capital base through provision of village-level grants and to develop a mechanism to link community organisations with line agencies and NGOs. The aims of the public works component were two-fold: to provide employment in rural areas at minimum wage as a safety net to as many people in as short a time as possible and feasible; and, to rehabilitate irrigation capacity and provincial and district level roads in a sustainable way. NEEP evolved from this public works programme.

Initially funded by the World Bank, NEEP served as the country's main social policy instrument. Today, eight years later, NEEP has evolved into more than just a safety net and is considered as the instrument for reconstructing and developing Afghanistan's rural infrastructure. Table 4 summarises how the programme development objectives of NEEP have evolved since 2002. NEEP's objectives have evolved over time however, two aspects of the programme remain paramount: employment provision for the vulnerable rural populations and rural communications infrastructure rehabilitation and reconstruction. These roads provided village to village and village to district connectivity.

Table 4: Evolution of Programme Development Objectives – NEEP

2002	2003	2003-04	2005	2006-Present
Provide employment in rural areas at a minimum wage, as a safety net, through the rehabilitation	Pilot a new approach to make labour-intensive projects as inclusive and	The provision of emergency short-term employment opportunities for the poor on labour-based rural	The creation of employment for ex-combatants in order to facilitate their re-	Provision of nation-wide quality rehabilitation, reconstruction and maintenance of essential

of irrigation capacity and provincial and district level roads in a sustainable way	practicable by involving disabled persons and vulnerable female heads of households	access infrastructure improvement subprojects	integration in society and to contribute to government alternate livelihood programme in opium and poppy producing areas	rural access infrastructure using appropriate labour-based approaches leading to creation of short-term employment opportunities for the rural poor

Since 2002, NEEP has focussed on the provision of emergency employment and infrastructure rehabilitation. Nevertheless, the Programme has evolved to specifically target the vulnerable poor. In 2003, the National Risk and Vulnerability Assessment exercise identified widows, disabled and nomads as the most vulnerable groups in rural Afghanistan. This new information was incorporated within programme objectives. In 2005, demobilised ex-combatants were also identified as a vulnerable group and were therefore targeted by NEEP. In addition, the Programme took on board the Government's priority for promoting alternative livelihoods. Also, over four years of implementation the priorities of NEEP have changed: at the time of inception, NEEP focused on provision of emergency employment first and infrastructure second. By 2005, the Government of Afghanistan led a review of the Programme and identified that the emphasis shifted towards infrastructure rehabilitation first and emergency employment provision second. The programme was renamed National Rural Access Programme (NRAP)[49].

It should be noted that even-though NEEP has changed its development objectives to acknowledge a changing landscape of vulnerability, the actual implementation of these objectives is limited. Moreover, given the current situation of Afghanistan, perhaps it is too soon to relegate emergency

[49] This research focuses on the time period from 2002 till 2005, the analysis is restricted to the impact of NEEP not NRAP.

employment provision to second priority. In essence, NEEP appears to have extended itself beyond its capacity to deliver.

To understand NEEPs impact on reducing vulnerability, it is important to understand programme design as well as implementation mechanisms for the three key impact indicators: institutional development, infrastructure rehabilitation and income transfer.

4.4. Design of NEEP

Institutional Arrangements: NEEP is housed in the Ministry of Rural Rehabilitation and Development (MRRD) but is implemented jointly by MRRD and the Ministry of Public Works (MPW). In its initial years, management was undertaken by the Joint Programme Management Unit (JPMU), which had representation from both the partnering ministries. The JPMU was tasked with the day to day management of NEEP in terms of establishment and maintenance of coordination systems, mechanisms of resource allocation, capacity development within the partner ministries and developing standards for planning, implementation and monitoring. To undertake these tasks, the JPMU received technical assistance from the ILO through funding earmarked for this specific purpose.

Due to lacking capacity at the Centre as well as at provincial levels, implementation of NEEP was managed by the United Nations Office for Project Services (UNOPS). Their task was to ensure appropriate labour selection, technically sound road construction and making cash transfers for work done. UNOPS operated in all the eight UN demarcated regions of Afghanistan and had an extensive network of engineers at the regional and provincial levels[50]. The aim was for UNOPS engineers to work closely with ministerial staff at provincial levels to ensure capacity transfer.

In order to achieve both the safety net as well as infrastructure objectives of NEEP, UNOPS sub-contracted road construction in two ways. Smaller, labour-intensive contracts were awarded to community organisations, which were made responsible for labour selection. Technical supervision of engineering works was undertaken by UNOPS. Larger, capital intensive contracts, involving the construction and/or rehabilitation of complex roads

[50] Afghanistan has a total of 34 provinces, which the UN has divided into 8 regions: North, North East, West, South, South East, East, Central Highlands and Central.

and requiring use of machinery, were awarded to private construction companies, who were responsible for labour selection. While the onus was on the private firm to ensure that technical standards were met, UNOPS maintained a strong supervisory role to ensure quality. The bulk of the income transfers made to the vulnerable poor were made through the first type of contractual modality. The second type ensured reconstruction of rural infrastructure.

Infrastructure Rehabilitation: The focus of NEEP was on rehabilitating rural road infrastructure, identified as a crucial need of post-conflict Afghanistan. Infrastructure rehabilitation has a two-fold impact: first, it ensures resource allocation in areas where the rehabilitation occurs and second, it provides access to markets and services.

In order to reduce vulnerability, greater resources should have been allocated to areas that had a higher proportion of isolated villages. However, to respond to the emergency in the immediate aftermath of the conflict, these indicators of vulnerability and isolation were not taken into account for the allocation of funds. In the initial phase of implementation, funds were allocated across provinces based on a provincial prioritisation exercise, which was later formalised into the Provincial Planning Exercise. According to the MRRD Senior Management Team (SMT), this was a bottoms-up exercise facilitated by the Government, which solicited development priorities at the village level. These were then collated at the district and provincial levels. Prioritised lists were compiled in participatory provincial planning workshops, which were conducted in consultation with local NGOs, Government representatives and *shura* members. They primarily consisted of four types of projects: irrigation, roads, schools and health centres. Once finalised at the provincial level, the plans were reviewed at the Central level and their technical feasibility assessed. Future road selection is based on this process.

Income Transfer and Targeting: Based on implementation experiences from elsewhere, particularly the Maharashtra Employment Guarantee Scheme, labour selection under NEEP was carried out on a self-targeting basis. Wage rates were set at an arbitrary US $ 2 per day, which was lower than the prevailing market wage for unskilled labour. However, NEEP does not guarantee employment and as expected, the demand for employment is greater than the supply of employment opportunities. Nevertheless, a

typical stint on a NEEP road construction project provides for approximately one month of employment.

The years 2004 and 2005 were critical in the evolution of NEEP. With the presidential elections in 2004 and cabinet elections in 2005, it was decided that the period of 'emergency reconstruction' in Afghanistan was over and development policies became more sustainable and medium to long term in their outlook. Consequently, the primary focus of NEEP shifted from provision of emergency employment as a safety net to the provision of rural access to foster development. This decision to re-direct the Programme was motivated partly by political considerations and priorities. It was reinforced by focus group data, which highlighted the impact of the Programme. The impact can be categorised in terms of the three aspects of workfare programmes highlighted above. The next section discusses this.

4.5. Programme Impact[51]

This section presents the impact of NEEP on the three impact indicators: infrastructure rehabilitation, income transfers and institutional development. The data used to compile these findings comes from three sources. First, meetings with ministerial staff at MRRD and MPW were instrumental in explaining the context of programme implementation. Second, focus group interviews conducted with community organisations in five out of eight UN demarcated regions in Afghanistan in November and December 2005. Table 5 gives a region-wise breakdown of interviews conducted and number of respondents met. The third source is secondary data used to corroborate and supplement the findings summarised here.

Table 5: Region-wise Breakdown of Focus Group Interviews

Region	Number of interviews	Male respondents	Female respondents
Central	4	63	8

[51] The findings presented in this section are based on focus group interviews conducted for the report: Durrani, A., Ahmed, N. & Ahmed, M. (2006). "The Road from Emergency Employment Towards Integrated Rural Access: Re-Orientation of the Afghanistan National Emergency Employment Program Towards Rural Access". Discussion Paper Series Report No. 19, The World Bank, Washington D. C.

Northern	2	50	35
Eastern	3	69	1
Western	3	45	10
South Eastern	2	45	-
Total	**14**	**272**	**54**

4.5.1 Infrastructure Rehabilitation

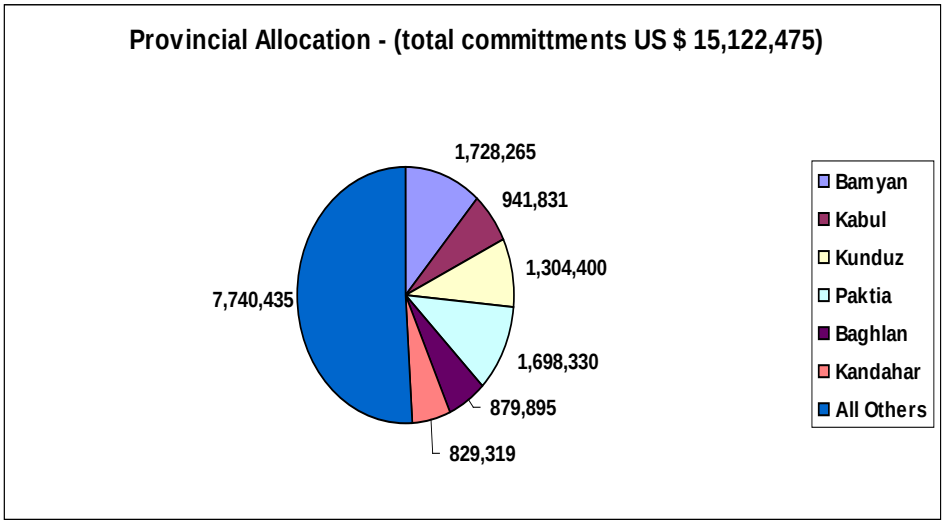
Infrastructure rehabilitation is crucial not just in determining the nature of access but also allocation of resources within the country. NEEP has primarily focussed on the rehabilitation of tertiary roads that provide village to village and village to district connectivity. By mid-2006, in addition to other rural infrastructure, NEEP had led to the rehabilitation of approximately 8,000 km of roads in this category and improvement of 10,000 running metres of cross-drainage structures.

In order to reduce vulnerability, bulk of the funding should have been allocated to provinces that had a higher proportion of vulnerable populations and/or provinces that had a higher proportion of isolated villages. However, in the immediate aftermath of the conflict, the first priority for NEEP was to utilise funds for emergency needs and not necessarily based on poverty or vulnerability estimates. In addition, because census or any other data was not available in this period, these allocations were not based on population estimates or other area-based vulnerability indicators.

Resource allocations under NEEP began in a skewed manner (Figure 1 showing total funding from the inception of NEEP till 2005): in the first two years of implementation, almost half of the funds available for NEEP were concentrated in 6 of 32 provinces[52]. At the time of programme inception, allocations were based on accessibility and security situation of provinces: the more accessible and secure provinces received a higher proportion of the funding.

[52] Afghanistan had 32 provinces, which were later increased to 34.

Figure 1: Provincial Allocations Through NEEP – 2002-2004



Despite this evident inequality across provinces, funds were allocated to every province from the start of the Programme. Such impressive coverage was not witnessed in any other programme implemented in Afghanistan. This resource transfer helped kick-start local economies as well as garner much needed political legitimacy[53].

Nature of access is determined by the pattern of infrastructure utilisation. Utilisation patterns have differed across the regions studied. In the East and Southeast, construction of roads has had an impact on alternative livelihoods by facilitating trade in commodities such as timber. Roads connect isolated communities to vocational training institutes and English language schools. In the North, road construction has provided livestock owners all weather access to markets and grazing grounds. Given that these livestock owners produce perishable products, such all weather access is a boost in their incomes. In the districts around Kabul, road construction has had a direct impact on increasing the asset value of land situated along the road. It also provides all weather and metalled access to the more lucrative markets of Kabul and other big city centres.

[53] These conclusions come from a household survey conducted in five provinces of Afghanistan in 2008, detailed findings from which will be published in subsequent research.

4.5.2. Income Transfers

The effectiveness of income transfers is determined by three factors. The first relates to the type of labour employed on the Programme: employment needs to be targeted towards the poor. The second relates to wage rates: the higher the amount of money offered, the more impact the intervention would have in reducing vulnerability. Third is the duration of employment: like wage rates, the benefit of the Programme depends upon the duration of employment.

Based on implementation experiences from elsewhere, particularly the Maharashtra Employment Guarantee Scheme, labour selection under NEEP was on a self-targeting basis. Wage rates were set at an arbitrary US $ 2 per day, which was lower than the prevailing market wage for unskilled labour. However, NEEP does not guarantee employment and as expected, the demand for employment is greater than the supply of employment opportunities. Nevertheless, a typical stint on a NEEP road construction project provides approximately for one month of employment.

At the end of 2005, for the surveyed five regions, the average duration of employment through NEEP was one and a half month and average monthly transfer was US$ 84. Table 6 shows how wage rates differed across the five regions studied. Average wages paid through NEEP were higher than the stipulated US$ 2 per day. Interviews with community organisations implementing the Programme reveal that workers were not willing to work at US$ 2 per day.

Table 6: Regional Wage Rates

Region	Wage Rates (US$)
Centre	4.00
West	3.20
East	2.00
North	4.00
Southeast	3.00
Un-weighted average	**3.24**

Source: World Bank (2006)

The reason for payment of higher wages was to avoid delays in the completion of construction activities. However, this created leakages. As Table 7 shows, workfare programmes do not target the extremely poor very well. Also, when compared to the food for work programmes, leakages under cash for work programmes have been higher. Participation in the programmes was mainly by able-bodied males.

Table 7: Distribution in Interventions by Poverty Groups (%)[54]

	Relief Food Inclusion error: 38 % Exclusion error: 83 %	**Cash for Work** Inclusion error: 47% Exclusion error: 79%	**Food for Work** Inclusion error: 45 % Exclusion error: 63 %
Extremely Poor	33	22	24
Moderately Poor	53	61	60
Well-off	14	17	16
Total	100	100	100

World Bank, 2004b

In their report on vulnerability in Afghanistan, the World Bank highlighted three categories of the vulnerable poor in Afghanistan. These include the disabled, widows and the *kutchi* (nomads) as the most vulnerable rural poor. These groups are structurally poor and self-targeting is not sufficient to solicit their participation in programme activities.

To address this issue, in its third year of implementation, NEEP combined self-targeting with community targeting so that the vulnerable populations could be better accommodated. This was combined with a shift in programme design: construction technology changed from labour-intensive to labour-based techniques where appropriate. Adopting labour-based construction technology also allowed for wages to change from a flat daily rate to piecemeal payment based on amount of work done. Community targeting is tricky though because it makes the labour selection process

[54] These figures assume that the intervention (relief, food for work, cash for work) is being made to reduce poverty. Inclusion error is the percentage of non-eligible groups covered while the exclusion error is the percentage of eligible groups not covered.

more ad hoc: the decision about who participates is made by community leaders.

Community targeting has had interesting results for labour selection. In the West region, most of the workers were refugees who had returned from Iran, had lost cultivable land and livestock during the drought and were destitute. Labour selection in this region was carried out by community heads. In the Southeast, all labour that was employed on the construction site consisted of youth that had basic education but no jobs. Prior to the implementation of the subproject, these workers had been involved in unlawful activities. Road construction has provided them with an alternative activity, which is legal and has a longer term advantage for the community. In the district of Shakardara situated near Kabul city, the governor involved himself in the recruitment process to ensure that workers from villages situated at a distance from the road were represented. Due to their location away from the road, the value of their land would appreciate less compared to those villages that were located along the road. Their employment on the construction site was a means of compensation. In Guldara, bordering Shakardara, the community hired six ex-combatants and six disabled persons to work on the road construction. In the North and West, using labour-based technologies made it culturally acceptable to hire women for tasks such as gabion weaving that can be performed from the homestead or compounds.

Income transfers help reduce vulnerability as they contribute towards income stabilisation. They enhance human security and exchange freedom by enabling households to increase entitlements. However, the income transfers discussed here are nominal and do not take into account the opportunity cost of participation. The next chapter examines the extent of real income transfer made through NEEP net of the opportunity costs.

4.5.3. Institutional Development

The implementation arrangements of NEEP were aimed to foster capacity development of the government, private sector construction companies and community organisations. Because community organisations were made responsible for a substantial portion of programme delivery, the accountability structures improved. This in turn, forced governments to become more cognisant and responsive towards the needs of the people.

Finally, the emphasis on decentralised delivery and active community participation created ownership over the entire reconstruction process. In post-conflict environments, this is necessary to prevent the resurgence of conflict.

In its early years, NEEP relied primarily on the United Nations Office for Project Services (UNOPS) for implementation. This was necessary in view of the fact that the Afghan government did not have sufficient capacity to implement a programme like NEEP on its own. In addition, the initial emphasis was on rolling out development activities, be they NEEP or other programmes. Nevertheless, the government was keenly aware of this shortcoming and actively sought to build capacity and strengthen institutional development through the implementation of NEEP. Capacity development was stressed at all levels.

At the community level, leaders primarily managed the workforce related to the construction of a particular road. In the Centre, Southeast and East, the district organisations had established a district level rehabilitation shura (community organisation). This district shura actively liaises with the district governor's office to formulate district development and rehabilitation plans, making the process more democratic. In the other two districts, a similar process of dialogue takes place but not as formally.

4.5.4. Impact of NEEP

As a tool to reduce vulnerability, NEEP has had a primary and secondary impact, which can be seen at three levels: government (central as well as provincial), community and individual. This is summarised in Table 8. By building capacity, strengthening government and community institutions and by enhancing social capital, the Programme has helped promote accountability and ownership in the development process. The creation of physical communications infrastructure has helped connect isolated communities and improve their access to services and markets. Income transfer has directly increased household resources. In this way, NEEP has helped reduce external and internal defencelessness. The impact at the government and community levels helps reduce exposure to risk, while the impact at the individual level helps increase access to entitlements. Based on the information collected through focus group interviews, it is possible to

say that NEEP had a real, albeit limited impact towards the reduction of vulnerability in the target regions.

Table 8: Impact of NEEP on Governments, Communities and Individuals

	Government	Community	Individual
Primary	• Capacity building through technical assistance • Political legitimacy through income transfers	Enhancement of social capital	Income transfer for work done
Secondary	Poverty reduction	• Strengthening trust relations • Fostering accountability • Increasing ownership in development process	Access rehabilitation

5. Conclusions

This chapter seeks to identify those policies that help reduce post-conflict vulnerability. It examines a variety of coping strategies to conclude that workfare programmes are better suited to undertake this task than others for a number of reasons. Implementation of workfare programmes helps in the transfer of money to local poor, thereby having a direct impact in increasing entitlements. This transfer is for work done, usually infrastructure rehabilitation, which leads to increase in entitlements. The implementation helps improve trust relations between the beneficiaries as well as the implementing bodies (usually governments and community organisations). This impact strengthens social capital and fosters accountability. Involvement of beneficiary populations in post-conflict reconstruction increases overall ownership of the process by the implementers as well as beneficiaries.

As the brief discussion about NEEP in Afghanistan reveals, the implementation of workfare programmes is dependent upon two aspects: programme design and programme implementation. The programme

design of NEEP has evolved to address the changing needs of the vulnerable poor in Afghanistan. This evolution has also been determined by continually improved availability of data. When NEEP was initiated, there was no census data for Afghanistan nor were figures available for area-based vulnerability measures. As more data has become available, development objectives have been modified to incorporate these findings.

Based on the information collected through focus groups, the implementation of NEEP has led to nominal income gains of the participants. In addition, NEEP also had an impact on transfer of income to remote areas of Afghanistan, which otherwise may have remained deprived of this funding. It has also helped rehabilitate rural infrastructure. The combined result of income transfer and infrastructure rehabilitation is an increase in entitlements held by vulnerable households. The implementation process itself has enabled the government to improve technical capacity, which instills legitimacy and faith in the capacity of the government to deliver.

As a workfare programme, the design of NEEP was effective in reducing both aspects of vulnerability. It aimed to increase entitlements through income transfer and later, through the use of roads to revive economic activity. It sought to reduce exposure to risk by providing access to services as well as strengthening institutions at the local, provincial and Central levels.

However, in the context of Afghanistan, NEEP faced the dogma of very high expectations and intervention from vested interests, which marred its implementation. First, wage disbursements were delayed, quality of infrastructure was mediocre and systems of maintenance were not effectively institutionalised. The issues of quality and maintenance threaten the sustainability of infrastructure created under NEEP. Third, the use of labour-intensive as opposed to labour-based construction methods and self-targeting were limited in their effectiveness in an environment where structural factors reinforce exclusion of specific groups. Fourth, the timing of implementation activities was such that competition from other employment opportunities was high. Fifth, NEEP is implemented through MRRD, a ministry that is responsible for all rural development activities in Afghanistan. Coordination with other rural development programmes implemented by MRRD was low, which made implementation inefficient.

In some cases, it lead to duplication of development activities and it also implied that the government was unable to capture economies of scale as a result of these activities.

Based on a comprehensive literature review and focus group data collected from across Afghanistan, this chapter has made an attempt to highlight the categories of NEEP's impact. Subsequent research should examine the extent of real income transfer through NEEP and patterns of infrastructure utilisation in rural Afghanistan, to identify the real impact of the Programme.

Chapter 6 Income Gains Through the National Emergency Employment Programme (NEEP)

1. Introduction

Workfare programmes are extensively used in post-shock environments to help households cope with the negative impact on well-being. They have become popular in the recent past as a type of conditional cash transfer (Besley and Coate, 1991, Smith and Ravallion, 1991, Dulmus et al, 2000, Smith & Subbarao, 2003) aimed at fostering efficiency in the development process: participants have to work in order to receive cash transfers. This advantage is particularly relevant in post-conflict environments where the programmes help ensure efficient use of limited funds allowing policy makers to undertake 'two jobs with one shovel'. Cash transfers help augment household incomes and allow affected populations to meet emergency needs that characterise post-conflict environments. Such programmes also help create and reconstruct infrastructure, which is an unambiguous need of post-conflict environments. This aspect of workfare programmes has a longer term more sustainable impact on post-conflict development. The previous chapter also highlighted an additional advantage of workfare programmes, particularly relevant in post-conflict environments: institutional strengthening and development.

This paper seeks to measure the income gained as a result of participation in the National Emergency Employment Programme (NEEP) in 2005, carried out by the Department of Rural Rehabilitation and Development of the then Afghan Interim Administration. The Programme was a flagship rural development initiative undertaken by a nascent government not only to re-build a country ravaged by thirty years of war but also to gain political legitimacy in an ethnically fragmented country. Therefore, the expectations from NEEP were not only manifold, they evolved over time. NEEP began as a safety net aimed at ensuring income transfer and sustainable rehabilitation of rural infrastructure (irrigation and tertiary roads) using labour-intensive construction techniques. In late 2003 and early 2004, the objectives evolved and the focus shifted to the provision of rural access infrastructure using labour-based construction techniques. By 2005, in addition to being a safety net for vulnerable households in rural areas, NEEP was also meant to provide employment opportunities for ex-combatants. The objectives

summarised above show that while inherently part of any workfare programme, income transfer was one of the many objectives of NEEP.

In this context, analysing income gains is relevant for two reasons. First, it provides an insight into the extent to which workfare programmes are an effective safety net in the *immediate aftermath* of the conflict. NEEP was initiated in 2002 and by 2005, it had been in full existence for two years. The question that the chapter seeks to address is: was there a positive income transfer through NEEP in the first two years of implementation? And if not, what are the main reasons for this?

Second, as elaborated in the previous chapter, at the time of inception, the Afghan Interim Administration (AIA) and donor agencies anticipated a high demand for employment opportunities. As a result, employment through NEEP was rationed and typically, workers were employed through NEEP for, on average, one month. The question that arises is: is one month sufficient to ensure positive income transfer to vulnerable households?

Assessment of income gains through NEEP is not straightforward. An accurate estimate of the income transferred by the Programme would be possible only when measured conditional on the income in the absence of the Programme. This simply means that the income an individual or household has as a result of participation in the Programme should be compared to the income that the individual or household would have earned by not participating in the Programme and pursuing alternative employment. Examining this issue raises two important concerns. First, while income as a result of participation is relatively easily identifiable, it is difficult to ascertain the counterfactual income i.e. the income that would have been earned in the absence of participation. This problem is emphasised particularly when baseline data is missing. Second, it is difficult to identify opportunity costs. If participants were drawn from a pool of unemployed people, it is possible to argue that the income gain is equal to the income earned through the Programme. However, this assumption may not be realistic. Even if participants may not be formally employed, the income they stand to forego in order to participate, does not necessarily have to be zero because they may be engaged in other activities that may not generate pecuniary returns.

To address this problem of missing counterfactuals and accurately assess the extent of income transfer to households through NEEP, the methodology adopted in this chapter is propensity score matching (PSM, Jalan and Ravallion 1999, McCoord and Wilkinson 2009). Using PSM, it is possible to create two groups: one of participants (treated) and one of non-participants (control), based on observable characteristics and predicted probabilities of participation. If the distribution of observable characteristics is similar across the two groups, it is very likely that the distribution of unobservable characteristics would also be similar. By comparing these two similar groups, it is possible to estimate the missing counterfactual income, which would be the income of the control group. The data used for the analysis is from the National Risk and Vulnerability Assessment (NRVA) exercise conducted in 2005.

The chapter is structured as follows. The next section summarises the salient features of the Programme relevant to the discussion in this chapter[55]. Section 2 emphasises those characteristics of the programme that influence participation. Section 3 presents a description of the data and an outline of the methodology when applied to measure income gains through workfare programmes. Section 4 presents results of the matching exercise as well as an analysis of the results and Section 5 concludes.

2. Description of the National Emergency Employment Programme (NEEP)

The National Emergency Employment Programme (NEEP) was initiated in Afghanistan in 2002 after the official culmination of the conflict there. It was implemented through the Ministry of Rural Rehabilitation and Development (MRRD) along with the National Support Programme (NSP), as a single-window framework to provide support to the vulnerable populations in rural areas. The aim was not only to allocate development funds in rural areas to reduce vulnerability experienced by these populations, but also to gain political legitimacy. As a result, from its inception, the Programme sought national coverage. From the outset, a workfare programme was considered to be ideal to achieve these objectives: rural development was achieved by infrastructure rehabilitation/reconstruction and by providing employment to unskilled

[55] A detailed description of NEEP has been provided in Chapter 5. For subsequent discussion in this chapter, NEEP is referred to as the Programme unless specified.

Afghans, the Government sought to supplement the meagre incomes of rural households. In order to effectively implement the Programme, the Government built capacity not only at the Centre but also the provincial and district levels, as well as the community levels, where community organisations were strengthened. These initiatives contributed towards institutional development and connected isolated communities with the Central Government.

The specific road rehabilitation/reconstruction projects undertaken through NEEP were prioritised by community members and chosen on the basis of their technical feasibility, which was determined by experts at the Central level. Smaller projects – less than US$ 30,000, were implemented jointly by the community members and labour selected by community leaders. Larger projects – over US$ 30,000, were implemented by private contractors and were more capital intensive, implying a lesser scope to employ unskilled labour. Where required, labour was selected jointly by the contractors and community leaders.

Because the demand for such employment was so high, labour could not be employed on NEEP projects for more than one month and a system of rotation ensured maximum involvement and coverage of the vulnerable populations. While the Programme was open to all able-bodied members within the community, nevertheless, because of cultural restrictions, female involvement in NEEP was conspicuously low. On some project sites, children as young as twelve years were employed primarily because they represented female-headed households. Even-though NEEP was initiated for the rural population, in the initial years, reaching rural areas was difficult in view of security concerns and also since these areas are isolated. Therefore, initial project activities were additionally implemented in urban and peri-urban areas.

Wages paid under NEEP were set at an arbitrary level of US$ 2 per day. The idea, as with other workfare programmes, was to set wages slightly below market wage, which was between US$ 2.40 and US$ 2.50, so that only the most vulnerable would self-select themselves into the Programme. However, once implementation began, it was soon realised that unskilled labour in Afghanistan was not willing to work for US$ 2 per day, as a result of which, wage rates were increased and varied across Afghanistan, ranging between US$ 2 in the East to US$ 4 in the Centre. The Central region had

relatively better security conditions and encompassed Kabul, which implied a higher availability of employment opportunities, making wage rates in this region the highest.

For the purposes of the analysis presented in this chapter, it is important to point out that participation in NEEP is determined mainly by being located in rural areas. Given cultural constraints, in effect, participation was limited to able-bodied men in rural areas. Due to weather conditions, NEEP activities were implemented in summer months, which coincided with other construction as well as agricultural activities. Evidence, based on focus group interviews also reveals that households that relied on agriculture for income generation were less likely to participate in NEEP. In addition, households having a higher number of men than women were more likely to participate since availability of labour was higher in these households.

Before the chapter turns to analysing the income transfer impact of the Programme, it is useful to compare the demographic profile of participants and non-participants. Table 1 presents this.

Table 1: Demographic Comparisons–Participants and Non-Participants (% households)

	Participants	Non-Participants	Difference
Age			
0 to 6	2.23	0.84	-1.39**
6 to 11	0.00	0.84	0.84*
11 to 21	1.34	2.25	0.91
21 to 30	16.07	15.74	-0.33
30 to 50	58.48	53.75	-4.73*
50+	20.01	24.27	4.26*
Household Size			
1 to 5	21.43	24.57	3.14
6 to 8	48.66	47.29	-1.37
9 to 11	22.32	21.23	-1.09
12+	7.59	6.91	-0.68
Education of Household Head[a]			
None	19.20	37.70	18.50***
Primary	9.82	8.17	-1.65

Secondary	7.59	4.28	-3.31**
High school	9.38	4.20	-5.18***
University/College	5.36	0.63	-4.73***
Post-graduate	4.02	0.00	-4.02***
Income Generating Category[a]			
Agriculture	28.57	58.20	29.63***
Livestock	6.25	11.51	5.26**
Agricultural wage labour	3.13	7.26	4.13***
Other wage labour	15.63	19.10	3.47*
Other	4.46	2.61	-1.85*

[a] The percentages for these categories do not add up to 100 because the number of observations for non-participants for these categories has been modified and reduced.

In terms of demographic characteristics, for some variables, the differences between participants and non-participants are statistically significant whereas for others, these differences are not significant. For example, the two groups do not differ at all with regard to household size. There are minor differences for the variable of age for both participants and non-participants. However, for the age groups between 11 and 30, these differences are not significant and it is primarily from this group that NEEP participants are drawn. The differences across education of household head for the two groups are significant but there appear to be a greater number of participating households with education. Also, those households for which the head is uneducated appear to be higher in the group of non-participants. Differences across income generating activities are significant and, except for the category of 'other income generating activities', in each case, non-participating households engage more in income generating activities compared to participating households.

It is important to highlight these aspects of Programme design because not only do they help explain the mechanisms that determine income transfer through NEEP, they also determine selection into the Programme. The determinants of programme participation are integral to the matching process, described in detail in the next Section.

3. Methodology

As an evaluation method, propensity score matching (PSM) has been used extensively to analyse the impact of labour market policies (Dehejia and Wahba (1999), Heckman et al (1997), Bryson (2002), Bertrand and Mullainathan (2004)).[56] Specifically to assess the impact of workfare programmes, it has effectively been applied by Jalan and Ravallion (1999), Diaz and Handa (2006) and McCord and Wilkinson (2009).[57] Section 3.1 highlights the relevance of PSM in analysing income gains through workfare programmes while Section 3.2 outlines the application of the methodology to the present case of NEEP in Afghanistan.

3.1. Relevance of PSM

In analysing the impact of a particular treatment, the problem is one of missing data (Heckman et al 1996). If income through participation is denoted as Y_1 and income through non-participation denoted as Y_0, income gains are calculated simply by taking the difference $\Delta=Y_1-Y_0$. Y_1 and Y_0 are given by the following functional forms where X is a vector of variables that influence participation while U is the error term:

$$Y_1=f_1(X_1)+U_1$$
$$Y_0=f_0(X_0)+U_0$$

However, an individual cannot be a participant and non-participant at the same time and ordinary data such as surveys would not provide information on the missing counterfactual income: Y_0 for participants. At least two main types of methods can be applied to analyse the differences between Y_1 and Y_0. These include randomised experiments and observational methods. With random assignment into the programme, the

[56] A number of authors have used matching for other sectors as well, for example Perkins et al (2000) in the field of pharmacoepidemiologic research, Hitt and Frei (2002) to analyse impact of online banking on profitability of customers and Brand and Halaby (2003) to analyse the impact of elite college attendance on career outcomes. Verme (2008) has used propensity score matching to compare the welfare impact of social assistance benefits and private remittances.

[57] PSM has been used extensively to analyse the impact of conditional cash transfers around the world: Handa and Davis (2006), Jere et al (2004), Armecin et al (2006), Borraz and Gonzales (2009), ILO (2009), Aguero et al (2006).

data can be used to estimate counterfactuals since the distribution of characteristics is considered to be the same. In non-randomised experiments using observational methods, direct comparisons between two groups can be misleading because the characteristics of participants and non-participants may differ systematically (Rosenbaum and Rubin (1983). Heckman et al (1997) postulate that observational methods rely on the data for non-participants to infer counterfactual outcomes for participants. It is assumed that non-participants, D=0, were eligible for the programme and did not participate. This implies that conditional on a vector X,

$$E(Y_0 \mid D=1, X)=E(Y_0 \mid D=0, X).$$

PSM is an observational method that matches participants to non-participants based on a propensity score, assuming that the distribution of X variables is the same for the treated (D=1) and control groups (D=0). When comparing observational methods with randomised assignment to the groups of participants and non-participants, Heckman et al raise a number of concerns. First, matching methods assume this equality but they recognise that it may not hold if the distribution of X, given D=0 is not the same as X, given D=1. Second, with random experiments, it is the same questionnaire that is administered to both groups whereas observational methods usually combine two datasets. This is not a specific problem for the analysis presented in this chapter since the groups of participants and non-participants are compiled from the same dataset. Smith (1995) points out that when using two different datasets for matching, two-thirds of the discrepancy results from differences in questionnaires while the rest results from a geographical mis-match of treatment and control groups. Third, observational methods are most effective when the participants and non-participants are drawn from the same labour markets and economic environments. For this study, it is not possible to identify to which geographical locations the participants and non-participants belonged, since data is not available. However, the analysis focuses on the period from 2003 to 2005, for which it is possible to say that the economic and social conditions remained similar. Moreover, as Rosenbaum and Rubin (1983) point out, in randomised experiments propensity scores are usually known whereas in non-randomised experiments, they have to be estimated. Moreover, in randomised experiments, X variables are known and independent of participation, a condition that does not necessarily hold for non-randomised experiments.

This study uses PSM as an observational method to assess income gains through NEEP. This choice is influenced by at least three reasons. First, identifying counterfactual outcomes through randomised experiments is difficult because in post-conflict environments, where populations face emergency humanitarian needs, setting up such experiments is not only costly but also unethical: how are potential beneficiaries distributed across treatment and control groups? Second, due to lack of data, especially baseline data (also a characteristic of post-conflict environments), an effective 'before and after' analysis is difficult. Setting up surveys to collect baseline figures can delay project implementation. This is also not desirable given the nature of needs in post-conflict environments. Till 2005, there was no comprehensive NEEP-specific survey that could be used in tandem with the NRVA to compile a representative group of participants and non-participants. PSM helps circumvent these constraints by balancing many features of the data at the same time: by creating a group of participants and non-participants using census or survey data, it is possible to assume that the distribution of unobserved personal attributes is the same for participants and non-participants. Since the same questionnaire is administered to both, the distribution of observed and unobserved characteristics is the same. Combining PSM with descriptive analysis of observable Xs for participants and non-participants provides an effective evaluation strategy.

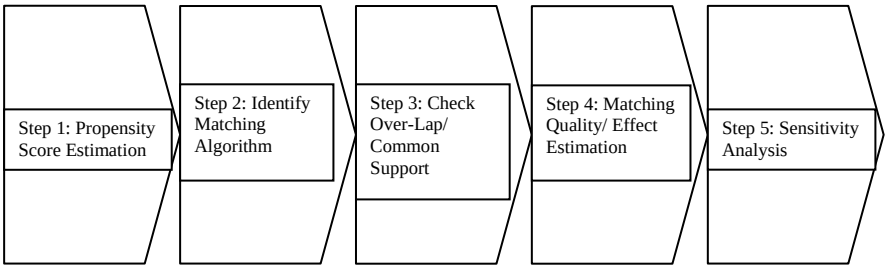
It is important to make a clarification. PSM is usually used to assess the impact of Programme participation on *individuals*. This chapter uses PSM to assess income gains for *households*. There are a number of examples in the literature using the household as a unit of analysis with PSM. These include McCoord and Wilkinson (2009), Mendola (2007), Arun et al (2006) and Guarcello et al (2003).

The next Section elaborates on how the methodology is applied to the case of Afghanistan.

3.2. PSM – Breaking Down the Methodology

PSM involves a number of steps, which are summarised in Figure 1.

Figure 1: PSM - Steps



Adapted from Caliendo and Kopeinig (2005)

Simply stated, PSM calculates a propensity score, which is the probability of participation, for participants as well as non-participants. This is used to match the two groups using an algorithm. The remainder of this Section describes the application of PSM to identify income gains through NEEP.

3.2.1. Estimating Propensity Scores

Propensity scores that identify the probability of participation are predicted using a logit model, primarily because compared to probit models, they allow for greater density mass in the bounds. The functional form of the model is as follows:

$$\Pr(\text{Participation}=1 \mid X_i)=F(\beta_{ij}X_{ij}) \text{ for i individuals and j variables, or,}$$

$$\Pr(\text{Participation}=1 \mid X_{11}, X_{22},\ldots X_{ij})= \beta_0+ \beta_{11}X_{11}+ \beta_{22}X_{22}+\ldots+ \beta_{ij}X_{ij}$$

Using administrative data as well as data from focus groups, presented in Chapter 5, this research has identified a list of 11 variables that are likely to predict participation in NEEP[58]. Table 2 presents mean differences between participants and non-participants for these variables. For some variables,

[58] While there are no set guidelines on the number and types of variables to include, there are arguments for and against the inclusion of more variables. Including more variables, some of which may be extraneous, violates the common support constraint and can increase variance (Bryson Dorsett and Purdon, 2002). However, trimming models should be avoided for reasons of parsimony (Rubin and Thomas, 1996). The argument here is that variables in the X vector should be omitted only if they are unrelated to the outcome variable or are not a proper covariate to predict participation (Arpino and Fabrizia 2009).

participating and non-participating households are different from each other but these differences are not systematic. Based on this, it is possible to assume that if there are unobservable differences between the two groups, these will also not be systematic.

Table 2: Mean Differences in Prediction Variables (% Households)

	Participants[a]	Non-participants[a]	Mean difference
Multiplicity of income sources	50.44	98.89	48.45***
Frequency of income received	59.82	21.69	-38.13***
Debt accrued due to purchase of housing	17.41	8.10	-9.31***
Employability of labour	56.70	80.01	23.31***
Frequency of support received	41.52	64.45	22.93***
Agricultural wage labour	3.13	7.26	4.13**
Nature of access to homestead	66.07	59.44	-6.63***
Access to education	36.16	56.83	20.67***
Strata	69.20	96.58	27.38***
Lowest income quintile	28.57	23.22	-5.35*

a The numbers in these columns represent the percentage of households in the group of participants and non-participants
Source: Author's own calculations using NRVA (2005)
*P<0.10, **P<0.05, ***P<0.01

These indicators are used to predict participation because they significantly differentiate participants from non-participants. The methodology uses logit regression to predict the probability of participation. The results are summarised in Table 3. Participation in NEEP is influenced by a number of factors. Households are less likely to participate if they have multiple sources of income. This is expected: if they engage in multiple income generating activities they have little time left to participate in the less rewarding NEEP. If they receive income for less than eight months, they are

more likely to participate in temporary employment provided by NEEP. This is also intuitive since income from typical activities in Afghanistan is low. If a household earns this for less than eight months, it is not possible to generate sufficient savings to smooth consumption. Based on the regression results, it is also possible to conclude that households that acquire debt, which may be a result of purchase of housing, are more likely to participate. Contrary to expectations, if households have excess labour, this negatively influences the probability of participation. One reason to explain this could be the fact that excess labour is usually female, who are restricted from participation in NEEP due to cultural constraints. If households receive support from other community members frequently, they are less likely to participate because their need for employment through NEEP is reduced. Households are more likely to participate in NEEP if they are less isolated; having a paved or unpaved road leading up to the homestead positively influences the probability of participation. NEEP is a programme for the poorest and vulnerable households. Therefore, being located in the lowest income quintile significantly positively predicts participation. Interestingly, even-though NEEP is a programme dedicated to rural populations, being located in rural areas is negatively related to the probability of participation. One possible reason for this is the fact that in the first two years of programme implementation, due to weak capacity, urgency to start up programme activities, difficulties in reaching the rural areas, project activities were implemented in urban and peri-urban areas as well.

There are some variables, which should influence the probability of participation but are insignificant in the regression. Household vulnerability status (developed in Chapters 2, 3 & 4) is not significant in predicting the probability of participating but it is positive so that the more vulnerable the household, the more likely it is that the household would participate. It is possible that if a household takes a loan for investment purpose, they are more likely to participate in NEEP, in order to repay the loan. However, this variable is also not statistically significant. If households are engaged in agricultural wage labour, they are unlikely to participate because agricultural activities are at a peak at the same time as construction activities, implying the two activities compete. Finally, if households have access to education, they are unlikely to participate and are expected to engage in education attainment.

Table 3: Results of Prediction Model

	Coef.	SE
Multiplicity of income sources	-3.50***	0.25
Frequency of income received	0.85***	0.20
Debt accrued due to purchase of housing	0.62**	0.24
Employability of labour	-0.33*	0.18
Frequency of support received	-0.47***	0.18
Agricultural wage labour	-0.33	0.41
Nature of access to homestead	0.35**	0.18
Access to education	-0.25	0.18
Strata	-0.88***	0.26
Lowest income quintile	0.37**	0.18
Constant	0.85***	0.32

Source: Author's own calculations using NRVA (2005)
N=4,176
Adjusted R^2=0.34
*P<0.10, **P<0.05, ***P<0.01

3.2.2. Identifying Matching Algorithm

Matching algorithms represent the process that is used to match our participants with non-participants. A number of algorithms are commonly used for this purpose (Heckmann et al, 1997). Because each algorithm has a different impact on variance and bias, this study compares the results derived from calliper, kernel and nearest neighbour (NN) matching. The data used for matching is derived from a household survey. While using NN matching, households are matched to the nearest neighbour in the dataset, which may or may not be a good match. To address this issue and because the number of non-participants is higher than participants[59], when trying to identify appropriate matches for participating households, it is preferable to use calliper or kernel matching. By doing this, the propensity scores of participants are compared to a range of propensity scores for non-participants, which improves the likelihood of a better match. The width of the calliper is set at 0.8 to ensure that the participating households are matched to a more relevant group of the non-participant households that fall within the propensity range.

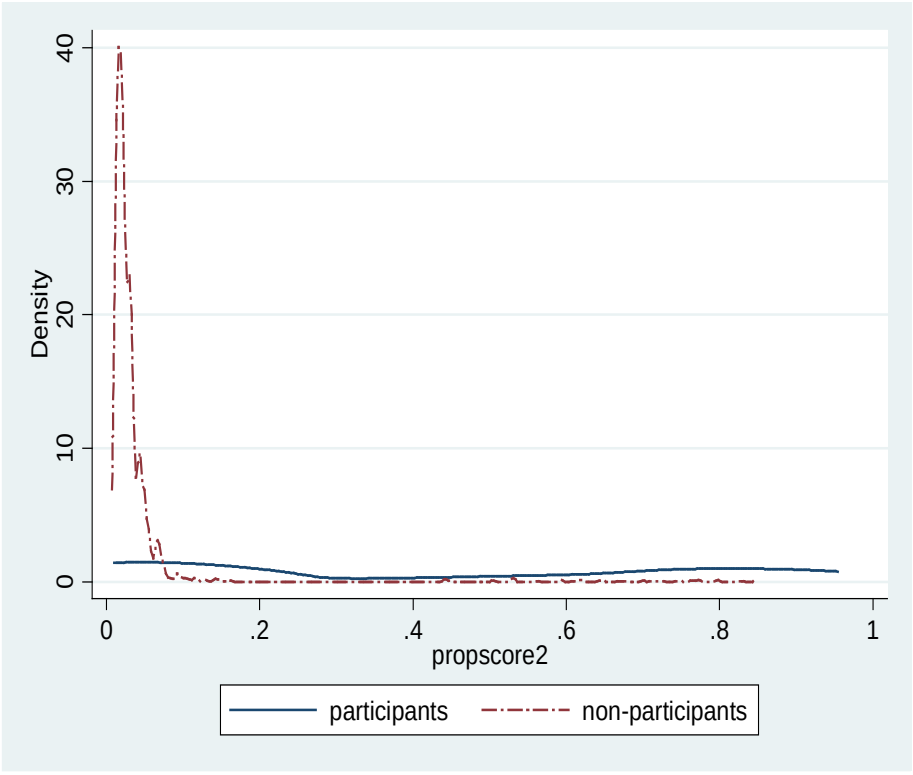
[59] Please see Section 3.2.4.

Once the propensity scores are calculated and the matching algorithms identified, the next step is to ensure the condition of common support is satisfied. It is important to satisfy this condition because if there is no common support between the groups of participants and non-participants, it is not possible to apply the methodology.

3.2.3. Checking Overlap/Common Support

Common support identifies the region where the propensity scores fall within the same range thereby implying that the combination of characteristics observed in the group of participants can also be observed among the group of non-participants. The easiest way to identify common support is to compare distributions of the propensity scores. Figure 2 shows the graphs of probability distributions for the participants of NEEP. The graph on the left shows propensity scores for non-participants and the graph on the right shows the same for participants. While the distributions are some what similar, there is quite clearly a range of values that fall outside the common support area, particularly for the non-participant group. These are ignored in the analysis presented in this chapter.

Figure 2: The Common Support: Distribution of Probability Scores



By comparing these two ranges, it is possible to conclude that while the range of propensity scores is not identical, there is a significant area of common support, which allows for the application of propensity score matching. Even-though for a large number of households propensity scores are below 0.2, these groups are comparable because with kernel and calliper matching, participants and non-participants are compared on the basis of a propensity range, which ensures that similar households within the two groups are compared to each other.

3.2.4. Assessing Quality of Matching

For this particular study, the outcome indicator is per capita income measured in dollar terms using purchasing power parity for 2005. Once the participant households are matched to non-participant households, differences are computed between the per capita income of participants and

the mean per capita income of matched non-participants. This income difference is the indicator of interest as it represents the gains or losses, whatever the case. This study uses the t-test to assess the statistical significance of the mean income difference between the treated and matched households. The dataset has been adjusted to be more applicable for PSM by reducing the number of non-participating households (for details, please see Section 4), which makes the comparison with participating households more relevant.

Two aspects of the analysis affect the quality of matching. The first relates to choice-based sampling of participants compared to non-participants in the dataset. The data used for this analysis is a household survey that does not specifically aim at collecting information on participants (not choice-based). Therefore, the sample of participants is low; 224 households of which 125 were used for matching. The total number of participants in 2005 formed 0.05 percent of the total population in Afghanistan. The total number of matched households in the sample, 125 out of 30,822 represents 0.41 percent of the sample. The sample of participants in the NRVA dataset does not need to be corrected for over-sampling. The second aspect of quality related to the timing of the empirical analysis: to avoid locking-in effects. The main objective in avoiding locking-in effects is to ensure that the participants and non-participants are compared in the same economic environment and individual lifecycle position. Because data collection for the participating and non-participating households happened at the same time, no locking-in effects are likely to occur.

3.2.5. Sensitivity Analysis

Sensitivity analysis used for this research has two aspects. The first focuses on comparing the robustness of results obtained by using three different types of matching algorithms. If the results are similar for each matching procedure, it would be possible to say that they reflect reality and are robust. A second type of sensitivity analysis for this research emphasises the use of bootstrapping. This technique includes the re-estimation of the results on a number of differing samples to estimate average treatment effects. This chapter presents results from 100 repetitions for each matching algorithm. Re-estimating the matching results in this manner would allow for the approximation of the sampling distribution and hence the population mean.

4. Data[60]

The data being used for this exercise comes from the National Risk and Vulnerability Assessment (NRVA) exercise conducted in 2005. The NRVA has been borne out of the World Food Programme's (WFP) Vulnerability Assessment and Mapping (VAM) exercise. The sample consists of 30,822 households with 227,070 individuals.

While the NRVA provides comprehensive information for households in Afghanistan, there are a number of limitations of the dataset. First, no census information was available when the data was collected. Nevertheless, the survey is as statistically representative as possible because population information for communities was gathered by district leaders and community heads. Second, with the emergence of unofficial districts, sampling becomes more difficult. This problem is compounded by the fact that usually the actual boundary does not correspond to the definitions maintained with the central administration. Third, because there are a number of stakeholders involved in the formulation of NRVA, the result is a mixed needs assessment methodology, which collects information on a number of sectors without explicitly emphasising any particular area of research. This is particularly true because there is a concern that the interests of all stakeholders may not be represented effectively and the resultant needs articulation by the respondents may not provide much information. On the other hand, this multi-stakeholder approach ensures that the final dataset is rich in information and provides comprehensive information for Afghan households. Fourth, despite all the efforts made to solicit information from women, in the more conservative areas, accessing women for interviews was difficult. It is noteworthy though that female representation in the 2005 dataset is higher than the data collected in 2003. Fifth, given the regional diversity amongst communities, it is possible that for some districts, indicators are not verifiable. Therefore, with the application of survey weights, it is possible that the data may not be representative. Sixth and most importantly, for a number of indicators, the

[60] For details on the 2005 Assessment and sampling, please refer to Ministry of Rural Rehabilitation and Development and the Central Statistics Office, Kabul Afghanistan (2007). "The National Risk and Vulnerability Assessment 2005: Afghanistan". In addition, the dataset has been used extensively to develop a profile of vulnerability in Chapters 3 and 4 of this study.

data is based on recall and is susceptible to inaccuracies. In the analysis presented below, such inaccuracies have been addressed to the extent possible through data triangulation.

The data was not collected with the specific purpose of highlighting treatment effects of NEEP. Also, no baseline data was collected prior to the implementation of the Programme. Consequently, dividing the population between control and treatment groups is not straightforward and the analysis is heavily reliant on the prediction model. This model should therefore encapsulate all the aspects of participation highlighted in Section 2.

The research has adjusted the dataset for PSM. The dataset has a total of 30,822 households of which only 224 have participated in NEEP, implying a large set of non-participants to match with. This not only increases bias when matching households but also makes it difficult to formulate an accurate and robust prediction model. In order to improve the efficiency of the prediction model, this study reduced the dataset by excluding observations for non-participants, across variables that are irrelevant to the prediction of participation in NEEP as well as in the matching process. Non-participating households were dropped if they engaged in income generating activities such as full-time employment with the government or NGOs, small businesses or received income through remittances[61]. In addition, if households own more than 20 livestock, they are excluded since livestock activities are the main source of income; household members from such households would engage in livestock management and grazing rather than employment on NEEP. Finally, non-participating households that rely on formal sources of information and that receive income for more than eight months in the year are dropped because such households are educated, in the top income quintile and usually located in the urban areas therefore not reliant on NEEP for employment generation. Based on this reduction, the total number of non-participating households has been reduced from 30,598 to 3,952.

[61] Focus group interviews from provinces such as Wardak reveal that households that receive remittances usually consist of elderly or women and children since it is the able-bodied men who work away from home and send remittances. The elderly are physically restricted from working on road projects while the women are culturally constrained.

5. Results

The previous chapter described NEEP using administrative records and results from focus group interviews. Before presenting results from the matching exercise, this section contextualises the Programme using data from NRVA 2005. It begins by presenting selected descriptive statistics for the Programme and continues to present the results of propensity score matching to identify the extent of income transfer through NEEP.

5.1. Descriptive Statistics

By transferring income, NEEP was aimed at reducing household vulnerability. Therefore, to contextualise this discussion of income gains, this section examines the level of deprivation experienced by participants and non-participants across the indicators used to measure vulnerability. These were elaborated in Chapters 2, 3 and 4 and are summarised in Table 4.

Table 4: Dimensions of Vulnerability–Participants and Non-Participants (% households)

Dimension	Participants	Non-Participants	Mean Difference
Functioning 1: Human Security			
Indicators to Measure Lack of Entitlements			
Average annual per capita income below US$ 456.25	67.86	56.29	11.57***
income derived from less than two activities	49.55	48.90	0.65
Problems satisfying food needs more than six times a year	58.48	66.05	7.5*
No access to shelter	3.13	4.07	0.94
Indicators to Measure Exposure to Risk			
Income received less than eight months in the year	46.88	45.84	9.35*
Poor condition of dwelling	41.52	44.46	2.95
Debt accrued due to purchase of housing	17.41	8.39	9.02***
Unsafe source of sanitation	88.39	90.55	2.15
Unsafe source of drinking water	79.91	88.80	8.88***
Un-reliability of fuel	89.29	88.38	0.9
Functioning 2: Exchange Freedom			
Indicators to Measure Lack of Entitlements			
No proof of ownership	39.29	43.27	3.99
No access to credit	35.27	61.19	25.93***
No access to land	50.89	55.01	4.12
Education level of household head up to or below primary	73.66	82.24	8.58***
No reading ability within household	30.36	40.74	10.38***
Less than 47 % members available for employment at household level	41.52	41.07	0.83
Only household assets owned	25.00	27.49	2.49
No access to livestock	42.86	37.59	5.26
Indicators to Measure Exposure to Risk			
Access only to informal sources of credit	81.70	84.74	3.04
Credit used only for consumption purposes	47.77	29.01	18.75***
Percentage of children not attending school	72.32	74.34	2.02
Percentage of employable household members below 49.72 percent	43.30	39.11	4.19
Functioning 3: Social Capital			
Indicators to Measure Lack of Entitlements			
No membership in any community organisations	74.55	78.32	3.77
No help received through social networks	32.59	17.22	15.37***
Indicators to Measure Exposure to Risk			
Access to none or informal sources of information	69.20	60.89	8.31*
No support received through informal arrangements throughout the year	14.29	19.58	5.30**
Functioning 4: Access			
Indicators to Measure Lack of Entitlements			
Poor availabiilty of physical infrastructure	66.07	41.65	19.42***
Indicators to Measure Exposure to Risk			
Access to education denied as distance from school to homestead high	36.16	49.96	13.80***

Source: Author's own calculations using NRVA (2005)

To recall, the indicators listed in Table 4 were used in Chapters 3 and 4 to compile an index of overall vulnerability for Afghanistan. Table 5 shows the levels of vulnerability experienced by participants and non-participants.

Table 5: Levels of Overall Vulnerability (% households)

Vulnerability	Participants n=224	Non-Participants n=3,952
Not Vulnerable	-	0.04
Less Vulnerable	12.59	13.83
Vulnerable	80.10	76.16
Very Vulnerable	7.30	9.97
Total	**100**	**100**

P=0.74

Source: Author's own calculations using NRVA (2005)

Table 4 shows that with regard to the dimensions used to measure vulnerability, there is no systematic difference between the participants and non-participants. For many dimensions captured in Table 4, there are no major differences between the distribution of participants and non-participants. Where there are differences, for some dimensions, the participants are more deprived and for others it is the non-participants who are more deprived. When overall levels of vulnerability are considered, a similar picture emerges: while relatively more non-participants are less vulnerable, more participants fall in the category of vulnerable.

In the early stages of implementation, the main objective of NEEP was to allocate funds to rural areas. Allocation of funds in this period was ad hoc primarily because of the emergency nature of needs as well as the lack of data necessary to formulate area-based vulnerability measures. Nevertheless, employment through NEEP has been provided to the less well-off members of society. Average household income (adjusted for PPP) for participating households stands at US$ 39 per month while average income for non-participating households stands at US$ 48. Table 6 presents participation rates across quintiles and it is obvious that majority of participants were drawn from the lowest income quintiles. Targeting was not perfect though and inclusion errors also exist with almost 13 percent of the participants coming from households in the highest income quintile.

Table 6: Coverage and Distribution of Participants Across Quintiles (% households)

Income Quintiles	Distribution Participants n=210	Coverage Participants n=210	Average Income per Quintile (US$ PPP Adjusted)
1	30.12	6.77	8.85
2	24.99	5.79	20.33
3	17.82	4.35	31.92
4	14.57	4.08	49.73
5	12.51	4.4	129.64
Total	100		

Source: Author's own calculations using NRVA (2005)

As mentioned, NEEP was implemented as tool for rural development. As Table 7 shows, NEEP's coverage in rural areas has been highest, with over 69 percent of the participants representing rural households. A significant proportion of urban households has also participated in NEEP projects. These projects have been implemented in peri-urban areas.

Table 7: Participants and Non-Participants Across Strata (% households)

Strata	Participants n=224	Non-Participants n=3,952	Total Population
Kuchi	0.55	0.90	4.00
Rural	69.02	95.91	92.40
Urban	30.43	3.19	3.60
Total	**100**	**100**	**100**

Source: Author's own calculations using NRVA (2005)

A total of 73 percent of the participating households surveyed through the NRVA reported that they worked on NEEP for up to 30 days while 13 percent of the households reported having worked on NEEP for between 30 and 60 days and 14 percent reported having worked for more than 60 days. On average, participants earned US$ 7 per day adjusted for PPP[62]. The average wage rate at the standard exchange rate of Afs 50 per dollar is US$ 3. Average earnings from the Programme stand at US$ 198. A majority of households use this income to ensure food security; a total of 74 percent of the households reported using this money for purchase of food items. The

[62] PPP adjusted exchange rate for Afghanistan is Afs 20.95=US $ 1.

second major use of these funds is payment of medical expenses (a total of 7 percent of households reported using NEEP income to pay for medical emergencies). Contrary to expectations, only 1 percent of the households surveyed invested NEEP earnings in the purchase of productive assets while 3 percent used their income for skill enhancement (education, literacy and vocational skills).

The above analysis shows that income transfer through NEEP is directed towards the more deprived households within rural Afghanistan. For some variables, it is possible to conclude that participating households are significantly different from non-participating households. However, a closer examination of these differences reveals that they are not systematic: overall, there are no emergent patterns that explain the difference between the participating and non-participating households. Therefore, it is difficult to compile a list of characteristics that participating households have but non-participating households do not.

To identify the real income gains from the Programme, the next section examines the results from matching across these two groups.

5.2. Income Gains from NEEP[63]

5.2.1 Results from Propensity Score Matching

This chapter seeks to test the effectiveness of NEEP as a vehicle to transfer income to the vulnerable poor in rural areas of Afghanistan. In the first two years of programme implementation, due to a multitude of reasons, it was difficult to reach rural populations, so NEEP activities were targeted also to households located in urban and peri-urban areas. Table 8 provides a summary of the results of matching, giving bootstrapped results for each matching algorithm. Based on the analysis, it appears that income gains through NEEP are negative. However, because these results are not statistically significant and given the limitations of the data, it is not possible to conclusively argue that income gains through NEEP are different from zero. This implies that the participants and the matched non-participants are statistically not different from each other with respect to per capita

[63] Income gains from the NEEP are defined as income gained net of opportunity costs. Using PSM this is calculated as the difference between the income of participants and matched non-participants.

income, measured in PPP terms. These results can be considered robust since they are corroborated by three distinct matching algorithms as well as the bootstrapping process.

Table 8: Gains in Monthly Per Capita Income (US$ PPP Adjusted) Through NEEP

Matching Algorithm	Bootstrap Repititions				Common Support - Number of Participants		
	None		100		N on common support	N off common support	Total N
	Income Transfer	SE	Income Transfer	SE			
Calliper	-8.16	6.35	-8.16	6.35	172	38	210
Kernel	-5.84	5.06	-5.84	5.06	169	41	210
NN	-8.16	6.35	-8.16	6.35	172	38	210

Source: Author's own calculations using NRVA (2005)

There are a number of reasons that can explain these results. From the outset, it should be stated that a key constraint in applying PSM to analyse income transfer through NEEP in Afghanistan has been the type and quality of data available. As mentioned in the previous sections, the dataset has not been compiled specifically to conduct propensity score matching and had to be adjusted for this purpose. Given this constraint, the next section analyses aspects of Programme design and implementation, which contribute to the results summarised in Table 8.

5.2.2. Analysing Impact of Income Transfer

This chapter sought to address two questions: whether workfare programmes create income gains for vulnerable rural households in the immediate aftermath of conflict; and, whether one month of employment is sufficient to ensure significant income gains. Using NRVA 2005 data to analyse income gains through NEEP in Afghanistan, it is possible to conclude that the answer to both questions is in the negative. This section analyses three features of programme design and implementation that contribute towards this outcome. These include design and objectives, wages and targeting.

Programme design and objectives: Even-though specific objectives of the Programme have evolved since its inception in 2003, NEEP has had two overwhelming functions: i) to provide increased livelihoods opportunities for rural poor through improved access to public and productive

infrastructure services, facilities and assets; and, ii) increase efficiency, effectiveness and sustainability of delivery of physical outputs, develop appropriate standards, models, systems and methods of resource allocation, programming, planning, designing, social targeting, implementation, reporting, information management and monitoring and evaluation. Income transfer therefore, was not the guiding objective of NEEP, rather the Programme was meant as a guide to investment policies that would lead to sustainable development.

As mentioned in the previous chapter, NEEP was initiated as a flagship programme by the Government of Afghanistan to reflect its commitment towards reconstruction and development. The objectives of the Programme encapsulated these intentions. At its inception, the emphasis of the Programme was on capacity building and institutional development aimed at setting up implementation activities. At this stage, there was relatively less stress on ensuring real income gains, especially minus opportunity costs. Moreover, at this stage, there was a focus on incorporating lessons learnt. In the National Budget Document for Livelihoods and Social Protection and Public Investment Programme for the years 2005-2008, the Government made it very clear that income transfer through short-term employment as a safety net was not the *only* objective of NEEP. The multiplicity of objectives was exacerbated by the fact that at the Central level, the mandate of the Livelihoods and Social Protection (LSP) pillar at the Ministry of Rural Rehabilitation and Development (MRRD) kept changing as the needs of Afghans kept evolving.

In addition to income transfer, a major part of the Programme was concentrated on institutional development. At the Centre, the implementation of NEEP entailed capacity building, institutional strengthening and medium to longer term development goals. At the community level, specific roads to be reconstructed were identified and managed by community organisations or shura. These community priorities represented comprehensive and holistic development needs such as infrastructure and private sector development, both of which are long-gestation interventions, from which the returns are not immediately forthcoming. Such development priorities, which were summarised in the objectives of NEEP, did not reflect simple income gains but more.

Wages: The wages paid under NEEP were set at an arbitrary rate of US$ 2 per day, on the assumption that this wage rate best approximated the wage rate of unskilled labour. In addition, a uniform wage rate across the country would help avoid negotiations with community members. Wages influence the extent of income gains in two ways. First, they determine the extent of income transfer, which in turn determines income gains. The wages were set at US$ 2 per day[64], below the daily wage rate for unskilled labour to facilitate self-targeting. Employment at this wage rate by definition leads to negligible income gains.

Second, implementation experience over the first three years revealed regional and seasonal variations in the amount of wages paid through NEEP. These variations exist primarily because of competing employment opportunities. During 2004 and 2005, a number of other public works programmes were initiated in Afghanistan, mainly funded through external-to-the-budget financing, which paid higher wages. Where such opportunities existed, labour availability on NEEP projects was low and wages paid had to be increased to attract workers. Other competition came from improved agricultural activities: the years 2004 and 2005 had bumper crop production, resulting from increased cultivable area as well as greater productivity. A third source of competition for employment came from the timing of activities: construction activities, both through NEEP and other private concerns, were implemented during the summer months. In the winter months, from October to March, when competing employment opportunities are low, NEEP activities are also discontinued due to adverse weather conditions.

The existence of competing employment opportunities increases the cost of being employed on NEEP making the net income gains low. Wage rates were not based on productivity norms and were therefore not commensurate to the amount of work undertaken. This implies that a full day of employment on other activities would make it possible to earn more than through NEEP.

[64] The wage rate of US$ 2 per day was established by Programme administrators, in the absence of data on accurate market wage rates. Implementation experience revealed it to be different from the rate that was *actually* paid on construction sites (please refer to Chapter 5).

Targeting: The targeting under NEEP had two aspects: labour selection and geographical resource allocation, both of which influence income gains.

The type of labour that was employed on NEEP is critical in determining the extent of income gains. In the initial years, up to 2004, the Programme employed only unskilled able-bodied men and did not entail any initiatives to include the structurally excluded groups such as women, female-headed households or households headed by the disabled. For able-bodied men, it is culturally and logistically easier to find work as daily labourers in any sector and as mentioned above, employment opportunities in agricultural and construction sectors were high. Therefore, for this group, the opportunity cost of working on NEEP was high, meaning low income gains from the Programme. For structurally excluded groups, it is difficult to find employment because they are either culturally or physically restricted. This suggests they have a low opportunity cost of being employed on NEEP and the potential for higher income gains through participation in the Programme. However, these groups are not able to participate in NEEP because of precisely the same reasons that exclude them from the labour market.

The other aspect of targeting that influences income gains is geographical resource allocation. In the first year of the Programme, resource allocation was ad hoc since data was not available and area based vulnerability measures could not be computed. Therefore, even-though funds were allocated across the country, relatively higher amounts of resources were concentrated in areas that were affluent, agriculture-based and close to urban centres. Alternative employment opportunities in these areas were high so the opportunity cost of participating in NEEP was also high. This, in turn, means low income gains from the Programme.

The second aspect of resource allocation relates to political legitimacy. In the initial years of implementation, the Programme was aimed as a vehicle to channel development aid to rural and isolated parts of the country. This made resource allocation even more ad hoc and reflected the commitment of the Government to deliver tangible development in every province rather than intent to promote real income gains.

To sum up, income gains in the first two years from NEEP were negligible because of competing employment opportunities, lack of proper targeting and an ambiguity regarding the objectives of the Programme.

6. Conclusions

This chapter sought to identify income gains that have been made by participants of NEEP. By participating in NEEP, workers incur an opportunity cost in terms of earnings that are foregone had they participated in the labour market. Income gains are defined as the additional income earned by a household after accounting for these foregone earnings.

Using propensity score matching, this chapter calculates the probability that a household will participate in NEEP. This probability is calculated based on a prediction model, which encapsulates those characteristics of households that determine participation. For the purposes of this study, a comprehensive list of indicators was used to determine participation. Having multiple sources of income negatively influences the probability of participation since household members may not have the time to supply labour on NEEP. If the household receives monthly income for less than eight months from other income generating sources, they are more likely to participate since incomes in Afghanistan are low and possibilities to save are few. In order to ensure a minimum amount of income per month, households that receive income for less than eight months are inclined to take up employment provided through NEEP. Likewise, if households acquire debt through the purchase of housing, they are likely to participate in NEEP to contribute towards debt repayments. If there are labour entitlements at the household level, that are not being fully utilised, there is a higher likelihood to participate in NEEP. However, in Afghanistan, it is usually female labour entitlements that are under-utilised due to cultural constraints. If households receive frequent support from other community members, their need to participate in NEEP is reduced. Similarly, if households have access to alternative forms of temporary employment such as agricultural wage labour, they are less likely to participate. If a household is well connected to main roads, their likelihood to participate in the Programme rises. Access to education negatively influences the probability of participating in NEEP since attainment of education is preferred over participation in temporary employment provided by NEEP. Even-though

NEEP is envisioned as a programme for the rural populations, being located in urban areas positively influences participation because in the initial years of implementation, for various reasons, NEEP activities were implemented in urban and peri-urban areas. Finally, likelihood of participation is higher if a household belongs to the lowest income quintile.

The chapter used the NRVA (2005) dataset to determine income gains from participation in NEEP. Using three separate matching algorithms, it is possible to conclude that income gains through NEEP are negligible. The effects are not statistically significant, which implies the participants and non-participants do not differ with respect to per capita income. These results are robust even when using various repetitions of the bootstrapping process.

There are three main reasons why NEEP did not generate significant income gains in the first three years of its inception. These relate to Programme design and implementation. First, there was ambiguity of the programme objectives. NEEP was envisioned as a flagship programme aimed at capacity building, political legitimacy and stimulating the private sector. Ensuring income gains through short-term employment was one of the many objectives of the Programme. Second, NEEP activities were implemented in summer months when construction and agricultural activities are undertaken. Particularly in 2004 and 2005, agricultural production was relatively higher. Employment opportunities for unskilled labour were relatively higher in the summer relative to winter. This competition increased opportunity costs of being employed on NEEP, which translated in lower income gains. Finally, the main category of workers employed on NEEP consisted of able-bodied unskilled men, who are able to freely participate in the labour market compared to structurally excluded groups such as women and disabled. The opportunity cost of participation for unskilled men is high, which reduces the extent of income gains.

Based on this analysis, it is possible to conclude that the effectiveness of the Programme in generating income gains is not necessarily an inherent flaw of workfare programmes as a social policy instrument. The performance of NEEP should be viewed in the context of post-conflict Afghanistan, where the Programme, like other cash transfer programmes in similar environments, was used as a tool to garner political legitimacy and to build

much-needed capacity of the Afghan civil service, not specifically to ensure real income gains. Also, implementation was fraught with challenges, which were not envisioned when the Programme was initiated. In the first three years of implementation of the Programme, which is the basis of analysis of this chapter, Afghan households faced emergency needs and the focus was more on stabilising a tense and fragile environment rather than providing income gains. It is likely that a similar analysis using current data (NRVA (2007) or data collected through specialised surveys) would provide positive results.

Chapter 7 Patterns of Infrastructure Utilisation in Afghanistan[65]

1. Introduction and Relevance

A key advantage of workfare programmes is that they contribute towards the creation of infrastructure. This aspect has been put to emphatic use in the reconstruction of post-conflict Afghanistan. The Afghan Government used the National Emergency Employment Programme (NEEP) to rehabilitate/reconstruct rural tertiary infrastructure[66]. In late 2004 and early 2005, the Government conducted a comprehensive review of NEEP to assess its impact as an instrument of social protection, a vehicle to provide nation-wide rural infrastructure and as a mechanism for institutional development. Based on the findings of this review it was decided that NEEP would be reoriented towards provision of rural access using appropriate labour-based approaches thereby creating short-term employment opportunities for the rural poor. To commemorate this reorientation, NEEP was re-named as the National Rural Access Programme (NRAP). Since its inception in 2002, approximately 9,000 km of rural roads have been rehabilitated through NEEP/NRAP, connecting around 3,000 villages to other villages and town centres. NEEP has generated approximately 12 million labour-days of employment.

The reorientation of NEEP/NRAP in 2005[67] towards the explicit objective of providing rural access embodied a conscious move away from the Programme being an instrument of temporary relief, towards a tool of sustainable development, particularly in the wake of the 2004 presidential elections. Focus group interviews detailed in Chapter 5 reveal that in the context of this transition from a phase of emergency to a phase of reconstruction, NEEP/NRAP was seen as a vehicle to stimulate development through provision of access to services such as health and education and markets. In assessing the impact of NEEP/NRAP therefore, it

[65] The data used for the analysis presented in this chapter is based on a survey that was conducted in six provinces of Afghanistan. These are conflict free and can be considered effectively post-conflict environments.
[66] Tertiary infrastructure provides village to village and village to district centre connectivity.
[67] Data gathered during interviews with officials of Ministry of Rural Rehabilitation and Development (MRRD).

is important to determine whether the Programme has in fact fostered such development.

To answer this question, it is important to consider the patterns of infrastructure utilisation in rural Afghanistan. Such patterns are influenced by two factors. First is the supply side that relates to the availability of rural access infrastructure, usually managed by service providers such as the Government. Second is the demand side that relates to the requirement for rural access infrastructure, which is determined by its users, such as rural households. The demand for rural access is in turn, affected by the nature of services *to* which rural households gain access. These services are varied and broadly include social services such as health and education and access to markets. The demand for rural roads is also impacted by how such infrastructure helps in undertaking household chores, including collection of water and fuel.

In highlighting the patterns of infrastructure utilisation, the aims of this chapter are threefold. First, the chapter examines whether greater provision of rural infrastructure changes the manner in which rural Afghans undertake household chores. Second, the chapter seeks to highlight whether it is possible to gain access to and utilise markets and services in rural Afghanistan using tertiary roads. Third, the chapter assesses whether the availability of roads changes mobility patterns in rural Afghanistan; specifically, whether the availability of rural infrastructure results in greater access to and utilisation of markets and services[68]. Specific hypotheses are developed to address these objectives. First, as the programme objectives envisioned, rural roads help kick-start local economies through better access to markets. Second, proximity to a main road improves household abilities to utilise services and markets. Third, road construction improves outcomes in health and education, by connecting communities to these services.

The National Risk and Vulnerability Assessment (NRVA) data does not provide the information required to address the objectives of this chapter. Therefore, this chapter uses data collected through a survey conducted in five provinces across Afghanistan in 2008. The survey does not specifically

[68] Recalling from Chapter 2, access relates to the existence and availability of markets and services. Utilisation concerns itself with the process by which households use markets and services to convert their set of entitlements into functionings.

focus on infrastructure rehabilitated through NEEP/NRAP but rather on tertiary infrastructure. Since the Programme is aimed at the provision of tertiary roads, it is assumed that the impact would not differ whether the infrastructure is provided through NEEP/NRAP or other programmes.

The chapter is structured as follows. Section 2 discusses the importance and challenges experienced in providing rural infrastructure. Section 3 outlines the methodology employed for data collection. Section 4 highlights key findings while Section 5 concludes.

2. Rural Infrastructure: Importance and Challenges

This section briefly examines the importance of rural infrastructure for poverty reduction in developing countries. It highlights the challenges that hamper creation of rural infrastructure and the importance of gender mainstreaming in this discussion. It concludes by briefly summing up the importance and the situation of rural infrastructure in Afghanistan.

2.1. Importance of Rural Infrastructure

It is widely acknowledged that for sustainable poverty reduction, three pillars are absolutely essential: i) a market-oriented, growth-inducing approach that expands opportunities for production and remunerative employment among the poor; ii) widespread access to social services such as health, education and fertility control; and, iii) targeted transfer schemes such as food stamps, subsidised food distribution and nutrition programmes (Gunatilaka 1999, UNDP 1996, Bradhan 1995, World Bank 1990). It is unanimously agreed that both production-oriented and welfare-oriented infrastructure is essential to promote productive capacity and quality of rural life.

Bery et al[69] have identified a five-fold impact that rural infrastructure has on the economy. First it is seen as creating better access and employment opportunities by enhancing physical access. Second, rural infrastructure increases production efficiency through greater access to advanced technology and mechanisation. Third, improved infrastructure increases access to previously inaccessible commodities and services. Fourth, better

[69] This is part of the introductory chapter of the India Rural Infrastructure Report to be brought out by the National Council of Applied Economic Research (NCAER).

infrastructure enhances efficiency, thereby reducing opportunity costs and allowing the rural population to indulge in productive activities. Finally, infrastructure promotes greater health and physical conditions through access to related facilities.

In this way, rural infrastructure is viewed as the first step towards integrated rural development. The technical paper on gender and integrated rural assessment and planning[70] shows that physical and social isolation are the key reasons for economic under-development. Physical inaccessibility is across facilities, resources, markets and services while social inaccessibility is across groups such as gender, religion, ethnicity, class and age. The latter is rooted in household arrangements, different types of works, education and ownership of resources.

Implementation of rural infrastructure has also been found to be a key way of addressing social inaccessibility through capacity building and community mobilisation (Barrios, 2007). Where communities are effectively and equitably represented in the identification, implementation and maintenance stages of infrastructure creation, such a process is seen to enhance community empowerment and the sustainability of the resultant infrastructure. Barrios also finds that sustainability is enhanced when such infrastructure is used to facilitate access to productive inputs and support services rather than direct provision of such services.

Songco (2002) had undertaken econometric analysis to point out that better infrastructure reduced incidence of absolute poverty and promotes economic growth. Songco's study shows that better infrastructure leads to an increase in income and improved consumption patterns. While studying the link between infrastructure quality and productivity for southern Mexico, Diechman et al (2000) find that a one percent increase in the overall infrastructure stock of the country contributes towards a one percent growth in GDP through greater market access where such functioning markets exist.

The way infrastructure improves rural lives varies across the world (Bryceson et al 2003). In Vietnam, creating infrastructure increases mobility thereby increasing access of isolated rural communities to much-needed

[70] Technical paper on Gender and IRAP 1

resources. In places like Ethiopia, where more services have reached the poor, creating infrastructure has had a comparatively impact on enhancing mobility. There is also increasing evidence to show that where economies are developed, the impact of rural infrastructure in promoting economic growth is high but where economies are less developed, this impact is limited.

The next section briefly discusses the challenges that impede the creation of rural infrastructure and diminish its beneficial impact.

2.2. Challenges in Infrastructure Creation and Utilisation

Gunalitaka (1999) highlights key factors that can inhibit the creation and utilisation of rural infrastructure. The efficacy of infrastructure depends crucially on the quality, reliability and quantity of infrastructure as well as its location, timeliness of provision and the sector that it seeks to support.

In many developing countries, infrastructure delivery is decentralised, with rural communities playing an active role in the identification, implementation and maintenance of rural infrastructure. Gerrard (2004) has outlined roles for effective decentralised delivery. He points out that central governments should be involved in nation-wide coordination building capacity, administering financial transfers and enforcing standards. Local governments are tasked with making decisions regarding the scale of infrastructure provision as well as the implementation modalities. Local communities articulate the demand for rural infrastructure, ensure transparency and accountability and participate in delivery. The role of the private sector in this delivery cycle is to engage in production activities.

Such delivery mechanisms are useful to ensure the quality, reliability and quantity of rural infrastructure. However, Brushett and John-Abraham (2006) show for Latin America, such delivery channels make it difficult to ensure maintenance and transparency. Targeting remains poor and time lags diminish the usefulness of infrastructure created.

Furthermore, such decentralised delivery can have implications for coverage, equity and may result in ad hoc infrastructure implementation. Where rural communities are far-flung with small settlement sizes, low densities and low per capita incomes, expected returns from investing in

rural infrastructure are low. This is in line with the discussion above. A vicious cycle ensues: because communities are inaccessible, investment in rural infrastructure remains low, which perpetuates their isolation.

The concerns highlighted above can broadly be summed up into one challenge: the objectives of rural infrastructure provision. The aims of infrastructure can be simply to make life more bearable for the rural poor or it can be to aid in the achievement of sustainable growth by setting rural economies on a higher path of growth and development. In the case of the former, localised approaches towards infrastructure implementation are sufficient while in the case of the latter, due importance needs to be given to ensure complementarities across sectors such as markets, health, education etc. In this case, emphasis should also be placed on the institutional structures for maintenance and sustainability.

2.3. Relevance of Gender Sensitive Analysis

As with other development projects, while assessing and delivering infrastructure needs, it is very important to ensure gender-sensitive analysis, for the simple reason that men and women have different needs (World Bank, 2007). Elaborating, women may have different transport demands and, in this case, these differences need to be highlighted. Also, policy may not adequately reflect the diverse and varying needs of men and women comprehensively. It is important also to determine whether policy is a result of an exhaustive consultative process between men and women. Finally, for purposes of efficiency, it is necessary to identify the types of projects that benefit both men and women.

Gender sensitive research emphasises the identification of gender roles, needs of both men and women, roles within the household, particularly with regard to division of labour, eliciting women involvement of women in planning and enhancing their awareness (Venter et al 2007). Viewing infrastructure in a gender sensitive manner emphasises provision of gender-responsive transport services. In Peru, gender sensitive analysis of existing rural transport policy shifted focus away from road to pedestrian tracks (World Bank 2007).

Gender inequalities in terms of access to and utilisation of rural infrastructure need to be addressed simply because of economics: society

benefits as women become more productive. Redressing such inequalities would not only improve female mobility but also other aspects of rural development. However, this is possible only if women engage to reap the potential benefits and the complementary services that would enhance productivity.

2.4. Rural Infrastructure in Afghanistan

Rural infrastructure is recognised as an unambiguous need of post-conflict reconstruction in Afghanistan. A number of studies conducted by the Afghanistan Research and Evaluation Unit (AREU)[71] across various sectors highlight lack of infrastructure as the key constraint towards growth; be it stimulating rural livelihoods, small and medium enterprise development, promoting health and education or simply meeting consumption requirements.

Within Afghanistan, agriculture remains the most prevalent source of rural livelihoods, accounting for 33 percent[72] households in the country. Nevertheless, according to World Bank research, even in years with good harvest, local produce is insufficient to meet local consumption requirements and one-third of the demand is fulfilled by grain imports. This indicates a need for rural infrastructure that would enable households to access sources of grain to meet calorific needs. Agricultural activities such as production of fruit and milk do generate a marketable surplus. But as Parto et al (2007) highlight in their study of small and medium enterprises in Afghanistan, these products usually perish due to unavailability of transport services connecting producers with markets.

Small businesses and daily wage labour are the second and third most common income generating activities respectively, accounting for almost 17 percent of households apiece within Afghanistan[73]. Provision of rural roads would provide such casual labour with the connectivity needed to pursue more employment opportunities. Involvement of women in income generating activities is restricted due to cultural factors but also lack of

[71] Grace, J. and Pain, A (2004), Grace, J. (2005), Kantor, P. and Schutte, S. (2006), Parto, S. (2007)
[72] Own calculations based on the NRVA (2005) dataset.
[73] Own calculations based on the NRVA (2005) dataset.

resources. Where women are involved, their accessibility to markets is limited, which inhibits them from improving their asset base.

Ill-health has been quoted by many researchers as well as practitioners within Afghanistan as a major cause of low productivity. It is also a major source of household expenditure. Within Afghanistan, access to services exists but these are usually of low quality and do not adequately address emerging health needs. Likewise, access to education has been limited not only because of low opportunities but also because of low job prospects within a specific geographical location (Grace and Pain 2004, World Bank 2006).

Provision of infrastructure in rural Afghanistan has been a key concern of the Government since the culmination of the conflict in 2002. This commitment was evident in the establishment of the National Emergency Employment Programme (NEEP) aimed at providing rural infrastructure by employing rural unskilled workers as a safety net. With the presidential elections in 2004, the focus of the Programme was shifted towards provision of rural access and it was renamed the National Rural Access Programme (NRAP). The programme has led to the reconstruction and rehabilitation of over 9,000 kilometres of roads in Afghanistan. In addition, the programme has lead to the completion of 72,044 structures and 2,172 running metres of bridges. The programme has been implemented in the 34 provinces of the country, covering 358 districts and 7,762 villages. Various other donors (USAID, DFID)[74] have also been active in the sector complementing the Government's efforts towards meeting rural infrastructure needs.

Daunting challenges continue to exist. According to the Afghan National Development Strategy (ANDS), total requirement for rural infrastructure is large: by the end of 2010, the Government aims to i) provide road connectivity to 40 percent of a total of 38,000 villages, implying coverage across over 15,000 villages; and, ii) develop a fiscally sustainable system of maintenance. This is a difficult task for many reasons. First, the Government of Afghanistan has not developed a coherent Rural Transport Strategy that would prioritise road construction activities. So far, the roads that have been reconstructed have been identified through a Participatory Planning Exercise (PPE), which is conducted at the village level and which reflects the

[74] http://www.mrrd.gov.af/nrap/

priorities of the villagers. Nevertheless, when consolidated at the national level, these roads have to be prioritised and there is no clear system to do this. Road reconstruction therefore remains ad hoc. Second, there is no clear maintenance strategy that would determine the quality and sustainability of rural infrastructure. Ministry of Rural Rehabilitation and Development (MRRD) has made attempts to develop such systems by involving rural communities. However, progress on this has been slow and the Ministry is in the process of identifying priority roads to pilot maintenance systems. Third, funding constraints are a major factor that hampers the efforts of the Government towards infrastructure reconstruction. Fourth, very little concerted effort has been made to reflect priorities of women in this process or to collect gender sensitive data that would a) highlight different patterns of rural access and utilisation for men and women; and b) feed into gender sensitive policy design. This is essential for the reasons highlighted above.

In this context, the present study is an effort to highlight patterns of rural access utilisation and mobility for men and women in Afghanistan. The next section outlines the methodology adopted for the survey.

3. Data Collection and Survey Population

3.1. Sampling and Data Collection

Table 1 summarises the sampling and data collection process. The findings presented in this study are based on qualitative and quantitative data collected through a survey funded by the World Bank and conducted in six provinces. These include Herat, Kunduz, Saripul, Kapisa, Nangarhar and Daikundi. The choice of these provinces was determined by three main criteria:

- *Population densities*: Population density of a province is representative of the country. In light of this criterion, the provinces of Kapisa, Nangarhar and Kunduz were chosen.
- *Regional representation*: the chosen province should represent the region that it belongs to. Based on this criterion, the provinces of Saripul, Herat and Daikundi were chosen. These provinces border Faryab, Ghor and Uruzgan, which are inaccessible due to security constraints. Analysing utilisation patterns in the secure provinces

would help draw conclusions that may be broadly relevant also for the insecure provinces.

- *Topography and Economic Activities*: The choice of provinces represents a mix of hilly as well as flat regions. This allows for an analysis of how transport usage varies across these regions. Also, settlements are scattered in hilly regions and more clustered in flat regions. This variation was captured by the sample. Further, through the choice of provinces, an attempt was made to capture three different types of economic activities: agriculture, livestock and casual labour.

In addition to representing densely populated areas of Afghanistan, the six provinces provide a good geographical coverage of the country as well. These provinces are representative of the regions where they are located, which enables the results to be reflective of provinces that are insecure and have received little donor and government attention so far. The final choice was also determined by security, a concern that dictated free travel of the enumerators. A summary of the sampling frame is provided in Table 1.

Table 1: Summary – Sample and Data Collection Frame

Province	**Village**	**Number of households**	**Enumeration**
Herat	Khushkhak	29	Team 1
	Kababyan	30	
Kunduz	Zarad Kamar	22	
	Fanjugah Uzbeki	29	
Saripul	Bharak	29	
	Dautum	29	
Kapisa	Wasi Khel	30	Team 2
	Sher Khan Khel	30	
Nangarhar	Nangharak	31	
	Daronta	28	
Daikundi	Askan	31	
	Follad	6	
Total		**324**	

During the process of transcribing and tabulating the data, it was realised that the forms from Daikundi had significant portions of information that was missing. This data was not provided by households in Daikundi. For

this reason, the province of Daikundi is not included in the final analysis. Within each province, two villages were selected, based on population figures as well as location. Keeping in line with the intention of the study, only the most populous rural villages were sampled. One village was selected, which was closer to the road and with good connectivity while the other village was far from the road and had poor connectivity.

During the planning phase of the survey, it was assumed that households to be interviewed would be from the lower income quintiles, identified through a wealth ranking process, which would be undertaken by the enumerators and community leaders at the village level. However, in practice, many households refused to provide information related to income and other details. Therefore, where it was possible, households from the lower income quintiles were interviewed. Where such households did not cooperate, other households willing to participate were included in the survey.

The data that was collected as part of the survey consists of mixed methods, consisting of a household questionnaire that resulted in quantitative data and focus group interviews with key informants that resulted in qualitative data. The household questionnaire was structured questions relating to household income generating activities, household chores such as water and fuel collection and purchase of and grinding of cereals for household consumption, types of vehicles and livestock owned, frequency of and reason for accessing to markets and health and education facilities. Information was also collected on other places visited within and outside the village. The focus group interviews were more open-ended with a checklist of questions that guided the interviews. The checklist covered a broad gamut of categories such as general village characteristics, transport infrastructure and services, places (other villages, district centres etc.) visited, system of water and fuel supply, crop production and marketing, health and education facilities, nature of enterprises and general attitudes towards transport and access. A total of ten focus group interviews were conducted with, on average, ten respondents that consisted mainly of local leaders including leaders of the shura and community development councils (CDCs), teachers and engineers.

A total of six enumerators were extensively trained in Kabul province for one week. The enumerators were divided into two teams of three each.

Team 1 surveyed the provinces of Kapisa, Nangarhar and Daikundi, while Team 2 surveyed the provinces of Herat, Saripul and Kunduz. Each team was required to survey a total of 180 households implying a total dataset consisting of 360 households. Due to its poor quality, the entire dataset collected from Daikundi province had to be rejected. In addition, a number of interview form from the other provinces also had to be ignored. This reduced the overall sample to five provinces, 10 villages and 287 observations. As part of this training, a pilot test of the questionnaire was conducted in the villages of Totamdara Ulya and Ofyan Sharif in Parwan province. Based on this field test, the questionnaire was revised to reflect the specificities of Afghanistan.

NEEP/NRAP has, to date, reconstructed/rehabilitated over 9,000 km of rural roads. The findings presented in the subsequent section are descriptive, mainly aimed at highlighting how and why rural Afghans use roads and the impact this utilisation has on mobility.

4. Findings

Before the findings from the focus group and household interviews are elaborated, it is useful to outline the demographic characteristics of the surveyed area. Table 2 summarises these.

Table 2: Demographic Characteristics of Survey Area

Characteristic	Herat	Kunduz	Saripul	Kapisa	Nangarhar
Household size	8.22	8.06	7.52	6.08	7.37
Main income generating activity	agriculture business, daily wage labour	agriculture	agriculture	daily wage labour	agriculture and trade
Average monthly household income[a]	106.80	239.86	106.61	80.76	124.30

a (PPP adjusted US$)[75]

[75] Adjusted for PPP US$ 1 = Afs 20.95

Source: Author's own calculations using survey data

With this context, the next subsection findings on how and why rural Afghans utilise rural roads and how the availability of roads affects mobility patterns. The first section highlights findings from focus group interviews conducted with key informants and community members at the village level. These findings are relevant since they outline general perceptions towards rural roads and how these vary across the five provinces surveyed. The second advantage of these interviews is that they help ease out aspects of infrastructure utilisation that influence mobility in rural Afghanistan. These are subsequently analysed in detail using household level data.

4.1. Perspectives on Provision and Utilisation of Infrastructure – Focus Groups

The focus group interviews reveal interesting themes related to the provision and utilisation of roads in rural Afghanistan. The findings presented in this section focus on four aspects of mobility related to infrastructure. These include briefly discussing the socio-economic conditions in the village; the perceived benefits of constructing and/or rehabilitating roads, with specific emphasis on the types of infrastructure that are most suited to the context of rural Afghanistan; the role of transport services in enhancing utilisation of roads; and, the role of infrastructure in enhancing access to health and education services.

4.1.1. Socio-Economic Conditions

Of the five provinces surveyed, Kunduz, Herat and Saripul rely on agriculture for primary income generation. In all three of these provinces, households use irrigated land and garden plots to grow wheat, maize, barley, vegetables and fruit, of which, on average, 50 percent is sold and the rest is used for domestic consumption. In Kunduz and Saripul, households sell the entire production of vegetables and fruit. Amongst the cereals produced, households tend to retain maize and barley for domestic consumption and sell wheat, mainly since wheat generates greater profit margins.

All the villages surveyed, report problems related to the availability of clean drinking water. In Wasi Khel, Kapisa, the source of drinking water is run-off from melting snow, which is captured and supplied through pipes. However, while the water is relatively clean, it is not available throughout the year. In the other villages, water is available through small streams that run through the village, which is primarily used to irrigate agricultural land. In Saripul, water from such streams is also used for domestic purposes. In the other provinces, domestic water needs are addressed through the use of ground water, which is accessed using wells and hand pumps, mostly located within the homestead. It should be emphasised that ground water and water from open streams is not safe for drinking purposes and poses a health hazard. In addition, with the exception of Fanjugah Uzbeki in Kunduz province, the supply of ground water is reduced due to the drought. In both villages surveyed in Saripul, water for domestic purposes is collected from outside the homestead. In Bharak, the children (male and female) undertake this task, while in Dautum, the entire family collects water. In both villages, it is transported using donkeys. In areas where water is available within the homestead, it is collected by women.

Most households in all the surveyed villages use firewood for fuel. In the villages of Kabyan in Herat and Dautum in Saripul, almost 70 percent of the households buy firewood and the remaining collect it from around the village. In Zard Kamar village in Kunduz province, firewood is purchased by 40 percent of the households. The purchase of firewood is undertaken mainly by the male adults in the household. Other sources of fuel include bushes which are collected from around the village (usually at a distance of 100 metres of the homestead); collection time varies between ten and twenty minutes. Other sources of fuel particularly include animal dung, which is produced within the homestead. Whether the fuel is purchased or collected, it is transported using donkeys.

4.1.2. Improving Physical Communications Infrastructure in Rural Afghanistan

Discussions with villagers reveal that while rural roads provide the obvious advantages of greater access to markets and health services, it is equally important to focus on the provision of infrastructure such as footpaths and footbridges, a need that was emphasised in all five provinces surveyed. In Nangarhar, in the villages of Daronta and Nangharak, constructing

footbridges would improve road safety especially given the proximity of these villages to the main asphalted roads. In Saripul and Herat, respondents stated that the construction of footbridges and footpaths would significantly increase the ease of mobility in the wet seasons, due to flooding and rain. In Kunduz, the construction of footbridges and footpaths would make it safer for children to reach schools and such infrastructure would make it easier for households to transport produce using animals. In Nangarhar and Kapisa, safety of the elderly and children was cited as the main advantage of such infrastructure.

Across the ten villages surveyed, all respondents identified an overwhelming need to rehabilitate physical communications infrastructure. All respondents unanimously agreed that improving the quality of the rural road network would significantly help in improving access to bigger markets where higher returns would be possible, particularly in the provinces of Saripul, Kunduz, Herat and in the Nangharak village of Nangarhar. In Kapisa and Daronta village of Nangarhar, where the main source of income is daily labour, better roads imply greater employment opportunities in the relatively larger cities. In the provinces of Kunduz, Saripul and Herat, because agricultural produce is perishable, improved nature of access would enhance household livelihoods.

The most significant benefit of improving the quality of rural roads is that it would promote the use of motorised vehicles. Most respondents highlighted the fact that they own motorised vehicles but are unable to use these because of the non-availability of infrastructure. If the quality of roads is improved, households would be able to use these vehicles to access markets in neighbouring villages, district centres as also the larger cities, in addition to accessing health centres in larger towns and cities. This benefit is discussed in greater detail in the next section.

4.1.3. The Role of Transport Services in Enhancing Mobility

The focus group interviews reveal that the mere existence of roads may not significantly increase mobility because of the erratic availability or unreliability of transport services. In both the villages surveyed in Saripul province, there is no public transport because of the poor condition of roads that lead up to the village. Public transport is either not available or is infrequent and unreliable: on average, villagers have to wait for two hours

for public transport. While less in severity, this problem exists in the other surveyed provinces as well. Even-though public transport is available, it is not reliable in the case of Kapisa and Kunduz, Daronta village in Nangarhar and Khushkhak village in Herat. In addition, vehicle owners tend to wait till the entire bus is filled up, implying long waiting periods. In the village of Kababyan in Herat and Nangharak in Nangarhar, public transport services are reliable and easily available – this due to the close proximity of these villages to main roads. Improving the quality of roads would make the villages more accessible to public transport resulting in an increase in overall mobility.

It need not be emphasised that there are a number of advantages associated with improving public transport. Respondents in the villages of Kapisa, Herat and Nangarhar reported that a greater availability of public transport would enable them to enrol in vocational training centres and enhance labour entitlements for greater employability. In Saripul, greater public transport is expected to improve access to better health centres and clinics. Currently, there are no health centres or clinics in the villages of Bharak and Dautum. The residents of Bharak use the health clinic in the district centre and it takes two hours to reach the clinic using a donkey. The residents of Dautum use the health clinic in the neighbouring village of Tabher or the hospital in the district centre. It takes three hours to reach the district centre on a donkey, which is the most common mode of travel. Improving the quality of rural roads would allow households to use better mechanised modes of transport resulting in more efficient access to health services.

A major reason why female mobility is restricted, particularly in the provinces of Kapisa and Nangarhar, is that male household members do not consider it culturally appropriate to allow women to travel alone in public transport. Respondents from the villages of Wasi Khel, Sher Khan Khel, Daronta and Nangharak state that in order to promote female mobility, it would be more desirable to promote public transport services that are managed by the locals, who are trustworthy. Such indigenous initiatives would make it more culturally acceptable for women to use public transport by themselves.

Currently, using public transport, on average, rural households pay approximately US$ 0.60 per person per one-way trip. This constitutes almost three percent of household income. Stated differently, household

members utilise three percent of total household income every time they use public transport. Villagers assert that improving the quality of roads would increase competition amongst the providers of public transport leading to improvement in the quality and cost of services.

4.1.4. The Role of Roads in Promoting Access to Social Services

Focus group interviews reveal that rural roads have a mixed impact in promoting access to health and education. In the villages of Zard Kamar and Fanjugah Uzbeki (Kunduz), Kababyan (Herat), Wasi Khel (Kapisa), Daronta (Nangarhar), Bharak and Dautum (Saripul), schools are easily available within the village and they cater to both male and female children. These schools go up till Classes 9 or 12 and provide comprehensive basic education. Children usually walk to these schools and it takes them up to thirty minutes. Tertiary education facilities are not available at the village level and universities are located in the provincial centres. Attainment of tertiary education is not culturally encouraged for women. For men, even-though there is no cultural bar, it is relatively easier for those household members located in villages nearer main roads. However, for most households which are located at a distance from main roads, accessing tertiary education is not easy given the fact that regular transport from villages to provincial centres is mostly unavailable. Given the condition of roads, providing reliable transport facilities may not be feasible. Improved availability of infrastructure would make it easier to access educational institutes by reducing travel time and promoting use of motorised vehicles. Villagers state that such initiatives would definitely increase male enrollment rates and may also positively influence female educational attainment. Nevertheless, the attainment of tertiary education remains low since household members weigh their decision to pursue it against the employment prospects post completion.

None of the villages surveyed in the provinces of Saripul and Nangarhar have health clinics. Residents of these villages usually have to travel either to neighbouring villages or the district centre to access health services. In Nangarhar, such travel is relatively easy since the villages are close to main roads. But in Saripul, such travel is extremely difficult. Public transport is not available and it takes up to three hours to reach the district centre using donkeys. In addition, villagers point out that these clinics are insufficiently stocked to address the health needs of the region. The villages of Fanjugah

Uzbeki and Khushkhel in the provinces of Kunduz and Herat respectively, also do not have health clinics and residents have to access services in neighbouring villages. In the other villages surveyed, Zard Kamar, Kababyan, Wasi Khel and Sher Khan Khel, clinics exist inside the village but these clinics are poorly stocked and the lack of access to main markets prevents households from being able to purchase necessary medicines.

The villagers point out that currently, health centres, clinics and hospitals are accessed only when a need emerges i.e. on a curative basis. Improving the quality of rural roads would significantly increase the number of times health clinics are accessed and also reduce the time taken to travel to health clinics. This could change the nature of how rural Afghans access health services – on a preventative basis, with the expectation that improved health outcomes would enhance productivity[76].

The next section explores these themes in detail at the household level.

4.2. Patterns of Access and Mobility – Household Level

Focus group interviews identify four key themes related to the provision, utilisation and maintenance of rural infrastructure. Using data collected at the household level, this section very briefly identifies how Afghan households utilise rural roads. The section specifically examines whether and how rural roads enable households to undertake household chores and access health and education services and markets.

Household chores that can require the use of rural roads include water and fuel collection and purchase of cereals. Water collection is undertaken primarily by children, whether water is collected from within the homestead (Kapisa and Nangarhar) or outside the homestead (Kunduz, Herat and Saripul). In villages where it is collected from outside the homestead, children do not use roads – rather footpaths to access the streams, which form the primary source of water. Cooking fuel consists mainly of firewood, bushes and animal dung. In the province of Nangarhar, crop residue is also used as cooking fuel. Such informal fuel is collected from around the homestead using footpaths within the village. In the provinces of Nangarhar and Kapisa, households use formal sources of fuel

[76] Grace (2004) argues that poor health is a key reason for unemployment in Afghanistan.

such as diesel and gas for cooking and lighting purposes. Such fuel types are purchased from markets within the village, or in neighbouring villages or in district centres; and it is transported using motorised vehicles, mainly public transport. Unlike informal fuel, the purchase and transportation of formal fuel requires households to use rural roads. This is an activity undertaken solely by male household members. For reasons stated earlier and in addition to the perception that their low levels of literacy, would make them unable to manage the transactions required to purchase fuel, women do not engage in this activity. Households in the provinces of Herat, Kunduz and Saripul do not use formal fuel because the cost of fuel itself is high and is compounded by the high cost of transport. Only nine of the households surveyed (3 percent) do not purchase cereals while 85 percent of the households purchase cereals in the district markets. The rest access provincial markets. For such purchases, households use rural roads: 44 percent of the surveyed households purchase cereals once a month[77], while 31 percent of the surveyed households purchase cereals once a week. A total of 71 percent of the households do not use commercial mills to grind cereals in contrast to 27 percent of the surveyed households accessing the mills within the village to grind cereals. These households do not utilise rural roads for grinding purposes and use footpaths to access the mills. The most common mode of transport includes donkeys (for over 19 percent of the households). Other modes include walking, bicycles, cars, motorcycles, horse carts and wheel barrows.

Mention has been made to access to health clinics in the surveyed villages in the previous section. Accessing healthcare remains a grave problem for rural Afghan households: either health facilities are not available, or they are of poor quality, inadequately supplied and staffed. Access to health services is ad hoc; health services are used on a curative basis rather than a preventative basis. On average, households in the surveyed provinces visit health services 8 times a year. Adult women use health services mainly for the purpose of child birth while other household members (elderly, adult males and children) use health services for all ailments. The different purposes of utilising health care are reflected in the numbers of men and women accessing health services as well as the mode of transport. Women from 173 of the 287 surveyed households (60 percent) utilise health services mainly using cars (48 percent), while 27 percent walk and 14 percent use

[77] All households surveyed in Saripul purchase cereals once a month.

donkeys. Of the households surveyed, only 35 households reported adult males accessing health services, primarily using motorised vehicles (63 percent). Children use health services more frequently than adult males, with over 61 percent of the households reporting health services being used by male and female children. Children usually walk to health clinics. Travel times to health clinics and hospitals vary across regions: in Herat, it takes, on average, 1.5 hours to reach the nearest health facility, in Kapisa and Kunduz the duration is 0.5 hours, 1 hour in Nangarhar and 3 hours in Saripul. Irrespective of who utilises health care and the purpose for which it is used, accessing health care facilities implies use of rural roads.

Brief mention about access to education in rural Afghanistan is made in the preceding Section. Access to education is severely limited and is varied across genders. For 11 percent of the surveyed households, adult males had attained primary education while the corresponding figure for adult females is 5 percent. Seven percent of the households reported that adult males had up to secondary education in comparison to 2 percent having adult females with secondary education. In 25 percent of the households, adult males had attained tertiary education, while none of the households had adult females who had attained tertiary education. The situation has improved since the fall of the Taleban as can be seen in the enrollment rates for children: in 51 percent of the sample households, female children were enrolled in primary schools, 15 percent households reported female children with secondary tertiary education. Almost 3 percent of the households were those where female children were enrolled in tertiary education. The corresponding numbers for male children are 56, 37 and 18 percent. While access to schooling is a main reason why educational attainment remains low, it is not the only reason. Poor security conditions and pressing economic needs are a bigger contributor to why Afghans are unable to attain education. In addition, particularly for women, marriage implies discontinuity of educational attainment. Cultural constraints too, limit female enrolment. The Afghan Research and Evaluation Unit (AREU) has compiled three case-studies to investigate parental attitudes towards education of their children. The findings of these studies elaborate that the decision to allow children to pursue education is determined by factors such as future employability, the educational background of parents and the possibility to combine studies with work. The studies also find, especially in Herat that educational attainment is restricted because of ethnic discrimination in schools.

The frequency of households accessing markets within the village is found to be 85 percent, district centre markets, 13 percent and markets in other villages, 2 percent. Only three of the surveyed households in Kapisa province accessed markets outside the province. The time taken to access markets varies across provinces, from approximately an hour in Herat and Kunduz to almost two hours in Saripul and thirty minutes in Nangarhar and Kapisa. Time taken to travel is related to the mode of transport used: in Nangarhar and Herat, households use motorised vehicles to access markets, while in Saripul, households use donkeys. In Kapisa household members mostly walk to markets and in Kunduz, they use a mix of motorised vehicles, donkeys, bicycles and horse-carts. Household members access markets for a variety of reasons, ranging, including socialising (88 percent), trading goods (5 percent), religious reasons (0.4 percent), to visit family (4 percent) and for employment (2 percent). In all the provinces surveyed, it is the male household members who access markets. It is uncommon for the female household members to visit markets even when they are engaged in income generating activities, such as the production of dairy products and handicrafts.

The findings presented in Sections 4.1 and 4.2 show that while rural roads are important to ensure access to markets and services, the provision of rural roads per se is not sufficient in enhancing household entitlements or reducing household exposure to risk. This concern has been raised for other developing environments such as India (Bery et al.), Sri Lanka (Gunatilaka 1999) and Latin America (Brushett and John Abraham 2006). These studies highlight that rural road construction in itself is insufficient to promote income generation and bring about an improvement in access to services. To have a sustainable impact on poverty reduction, rural road construction should be combined with other initiatives including market development, training, provision of financial services, among others.

5. Conclusion

Till 2008, the National Emergency Employment Programme (NEEP)/the National Rural Access Programme (NRAP) had successfully completed the rehabilitation/reconstruction of over 9,000 km of tertiary roads, providing village to village and village to district centre connectivity. Does such an investment necessarily imply greater productivity, economic development

and better standards of living? It identifies three main hypotheses: rural roads help kick-start local economies through better access to markets, proximity to main roads implies greater utilisation of markets and services and road construction improves health and education outcomes.

Based on a survey of ten villages in five provinces across different regions in Afghanistan, this study finds the impact of the Programme to be positive, but limited in achieving these objectives. Productivity levels in rural Afghanistan are low, so market access is of limited utility and a number of households visit marketplaces for socialising. Where households are able to generate marketable surpluses, due to lack of transport services, they are compelled to sell their produce in local village markets, which are either saturated or provide lower returns than markets in bigger centres. Proximity to main roads positively influences mobility since it enhances availability and reliability of motorised vehicles. It improves market access, allows for trading possibilities and has a beneficial impact on tertiary education outcomes. Proximity to a main road implies better utilisation of health facilities and services, due to increased use of motorised vehicles. However, simply providing access is not sufficient to improve health and education outcomes because the quantity and quality of clinics, hospitals and schools remains poor. In terms of enhancing education, while better connectivity improves access to tertiary education facilities, this does not necessarily imply greater enrolment, in view of the low prospects of employability. Villagers are of the opinion that greater access would allow household members to benefit from institutes of vocational education as these provide specialised training with better job prospects upon completion.

The findings presented above show that while rural roads are essential in isolated communities getting connected, isolation is not the main cause of vulnerability for these communities. Roads provide connectivity to something. However, in Afghanistan, as in other post-conflict environments, levels of deprivation are high, implying restricted benefits. While roads connect rural households to services, the utilisation of these services is marginalised if the delivery is inadequate. In Afghanistan, roads have successfully connected households to health facilities, however since they are in such a poor condition, their utilisation remains dismal. The construction of rural roads provides access to educational facilities but these facilities are either non-existent or ineffective in increasing educational

attainment in rural Afghanistan. Empirical analysis from across the world shows that rural road construction enhances economic productivity by allowing households to access main markets. In the case of rural Afghanistan, enterprises remain underdeveloped, product differentiation is low and exchange capabilities are depleted because of the war. So in spite of their ability to reach markets, households are unable to effectively engage in market activities.

The proximity to road and topography does not significantly affect mobility as much as the availability of transport services. The ability to use public transport services and motorised vehicles implies higher mobility than in areas where such services are not available. Since the sources of income remain primarily the same in hilly and flat terrain – daily wage labour and agriculture, the reasons for utilising rural roads do not differ considerably. Mobility in flatter areas is relatively higher than hilly areas, the reason for this is not topography, rather the relatively higher availability of public transport.

While rural roads are necessary, they are not sufficient in reducing household vulnerability in rural Afghanistan. For it to be successful in reducing household exposure to risk and increasing household entitlements, road construction should be combined with complementary activities. These could include business development, training in basic literacy and numeracy, strengthening of community organisation and improving the quantity and quality of health and education facilities. In addition, it is necessary for the Government of Afghanistan to develop a coherent rural transport strategy, which identifies tertiary road networks that should be constructed through NEEP/NRAP and how these link to the overall network of secondary and primary roads. Such a strategy should also include issues related to road maintenance, which are essential to ensure the sustainability of the road network. Given the funding constraints that mar post-conflict reconstruction in Afghanistan, this strategy is vital in improving the utility of rural roads.

8 Conclusions

This study has highlighted a number of aspects related to the idea of vulnerability. While significant amount of literature has been focused on defining vulnerability, consensus on a workable definition amongst these writers remains low. Because of its amorphous definition and its dynamic nature, techniques used to measure vulnerability remain under-explored. Existing attempts at measuring vulnerability focus on risk reduction, emphasising the situation of vulnerability before the occurrence of a shock. There is little information on how the occurrence of a shock influences vulnerability through the creation of new risks and deprivation. In addition, existing concepts and measurement methodologies proposed by these studies tend to be inflexible: they are not context-specific and may lose their relevance when applied to various situations. Simply put, existing research on vulnerability treats it as a static concept and not a dynamic process. These studies do not effectively highlight the root causes of vulnerability and the process by which these causes result in vulnerability.

The research has also attempted to study post-conflict reconstruction, particularly in the immediate aftermath of the conflict. Policy making in such environments is inhibited by a number of factors. Political legitimacy and policy interventions are usually aimed at appeasing the populations affected by conflict rather than achieving other objectives. Also, the nature of post-conflict needs evolves from emergency to sustainable development. Policies aimed towards post-conflict reconstruction should be sufficiently flexible to incorporate this transition. Further, data constraints make it difficult to assess these needs and formulate appropriate policy responses.

The central themes explored by this study are two-fold. First, it seeks to examine vulnerability in post-conflict environments, especially in the immediate aftermath of conflict. Second, it proposes appropriate policy responses that are ideally suited to redress vulnerability.

In order to address these questions, the first step is to define vulnerability. Chapter 2 develops a comprehensive definition of vulnerability in post-conflict environments by viewing it in terms of entitlements, capabilities and functionings. The chapter begins by outlining the relation between risks and shocks, arguing that it is not the existence of risks per se that directly causes a fall in well-being, rather it is the manifestation of risks into

negative shocks that adversely affects household and individual well-being. Using conflict as a specific example of a shock, the chapter argues that the occurrence of a conflict not only depletes resources to which households and individuals have access, but also causes a breakdown in the process by which households and individuals convert their resources into achievements. In Sen's terminology, resources under the legal control of households are referred to as entitlements, the conversion process reflects a capability and the achievement is the functioning. The Chapter refers to the depletion of resources as a lack of entitlements that encapsulates the fall in resilience, which increases internal defencelessness. The inability to convert resources into achievements results from exposure to a risky environment that surrounds the household or individual, or external defencelessness. The combination of these factors results in vulnerability. Based on this definition of vulnerability, the Chapter identifies four major functionings losses that typically characterise post-conflict environments, including loss of human security, exchange freedom, social capital and access. For each of these, the Chapter identifies indicators that measure lack of entitlements and exposure to risk.

The main findings of this Chapter are two-fold. First, it outlines the fact that vulnerability is dynamic in that it not only emphasises household and individual well-being at the present but also how it changes over time. Making this distinction is important because uncertainty about the future affects household and individual well-being directly. From a policy perspective, it is important to make this distinction since policies that respond to both these components will have a greater and more sustainable impact in the long run. Second, because vulnerability is the combination of two components, it is multidimensional and cannot be measured using conventional uni-dimensional indicators such as income or consumption.

In order to formulate appropriate policies that respond to vulnerability, it is important to assess the severity of the problem. Measuring vulnerability is not only complex but also tricky. In the absence of panel data or multiple waves of cross-sectional data, vulnerability assessments are usually replaced by poverty assessments, which provide an incomplete picture. Chapter 3 summarises the literature of existing approaches used to measure vulnerability and argues that these do not provide sufficient insight into the dynamics of vulnerability after a shock has occurred. Moreover, these approaches usually cater to the specific interests and needs of the

organisation undertaking the analysis rather than reflecting the needs of the people being studied. Even when such approaches view vulnerability as being the result of multidimensional losses, the indicators that constitute 'multidimensionality' are not clarified. Recognising these shortcomings, Chapter 3 proposes a six-step methodology that can be adopted to measure multidimensional vulnerability. Step one envisages the identification of domains of losses, which are defined to be the same as functionings losses. Step two divides each domain into the components of vulnerability. Step three identifies, for each domain, indicators that measure lack of entitlements and exposure to risk. This study compiles a list of sixteen indicators that can be used to measure lack of entitlements and twelve that can be used to measure exposure to risk. Step four identifies thresholds for each indicator; a household is considered deprived in an indicator if its level of endowment falls below this threshold. Thresholds used in this research are both objective and subjective. The former reflect absolute levels of deprivation and are derived from existing literature. Subjective thresholds capture relative levels of deprivation and are derived from the data. These indicators are specific and reflect the context of the environment they seek to measure. Step five identifies cut-offs, which measure the number of indicators in which a household is found to be vulnerable to experience multidimensional vulnerability. Cut-offs imply aggregation within domains (intra-domain vulnerability), as well as across domains (overall or inter-domain vulnerability). The final step envisages identification of levels of vulnerability. When measuring intra-domain vulnerability, a household is defined as being not vulnerable if it experiences no deprivation or deprivation across one indicator *within* a domain. A household is less vulnerable if it experiences deprivation across two indicators, vulnerable if it experiences deprivation across three and very vulnerable if it experiences deprivation across four or more indicators. When measuring inter-domain vulnerability, the aggregation is made *across* domains to arrive at an index of vulnerability. In this, each intra-domain outcome (not vulnerable, less vulnerable, vulnerable and very vulnerable) is assigned a rank that ranges from 0-3. The maximum rank a household can attain is 10[78]. A household is not vulnerable if the rank is 0, less vulnerable if the rank falls between 1 and

[78] This is because the domain for access has only two indicators and can receive a rank of 0 or 1. Aggregating across all four domains therefore, a household can attain a maximum rank of 3 in each of the domains of human security, exchange freedom and social capital and 1 for the domain of access making the maximum 10.

3, vulnerable if the rank falls between 4 and 7 and very vulnerable if the rank falls between 8 and 10.

Using data from the National Risk and Vulnerability Assessment (NRVA 2005) exercise, this methodology is applied to develop a profile of multidimensional vulnerability in Afghanistan in Chapter 4. However, in order to contextualise this profile, Chapter 3 analyses patterns of uni-dimensional deprivation to identify how the occurrence of the conflict influenced household access to and utilisation of resources in Afghanistan. This analysis indicates that rural and kuchi populations are most deprived in Afghanistan. For indicators such as sanitation, access to safe drinking water and sources of cooking and heating fuel in the domain of human security, deprivation in Afghanistan is pervasive. A significant portion of the population also experiences deprivation across the indicators of income stability and availability. Deprivation in the domain of exchange freedom is severe. The occurrence of the war has not only depleted production, trade-based and labour-based entitlements in Afghanistan, thereby reducing resilience, it has also resulted in a breakdown of the organisations and markets that make it difficult for households to utilise the meagre assets to which they are entitled. In the domain of social capital, prolonged war has forced households to develop strong mechanisms of informal risk management even-though community membership is low and sources of information remain informal. Availability of access is limited, leading to diminished utilisation of social services and markets for productive purposes.

Chapter 3 provides a context in which the profile of multidimensional vulnerability in Afghanistan can be assessed. The profile of vulnerability this study develops for the case of Afghanistan, presented in Chapter 4 has a number of features. First, the profile presents a summary of multidimensional vulnerability at the intra-domain level that identifies those indicators, which, when combined with other indicators within a domain, contribute most towards vulnerability. The second feature presents inter-domain or overall vulnerability, which aggregates across domain to compile an overall index of vulnerability. This index is formulated, based on the assignment of ranks described in Chapter 3. The third aspect of the profile identifies which components of vulnerability contribute more towards it and separately ascertain those households that experience deprivation across both components. The inter-domain/overall and

component-wise approaches present two distinct methods of vulnerability measurement and Chapter 4 highlights this distinction. Finally, the Chapter presents an analysis on the determinants of vulnerability i.e. the incidence of vulnerability across various demographic characteristics.

At the intra-domain level, households experience two dimensional deprivation in the three domains of human security, social capital and access. Deprivation in the domain of exchange freedom is severe and households experience three and four dimensional vulnerability. At the inter-domain level, multidimensional deprivation in the domains of human security and exchange freedom exacerbate vulnerability while losses across the domains of social capital and access contribute less and may even redress vulnerability. With the component-wise analysis, it is possible to conclude that the proportion of households that experience only exposure to risk is low while households that experience lack of entitlements is high. If lack of entitlements is considered as a proxy indicator for poverty, it is possible to say that households in Afghanistan are severely poor. However, the largest proportion of households experience deprivation across both components. In terms of determinants, the profile identifies rural and kuchi households to have the highest incidence of vulnerability along with households that rely on livestock activities, wage labour and remittances for income. Vulnerability is also highest for households where the head is uneducated. Households with up to three children experience the highest incidence of vulnerability, which indicates that larger families enjoy economies of scale living together. These households also experience the greatest exposure to risk since they are unable to convert their entitlements into functionings.

In using the multidimensional approach towards the measurement of vulnerability, the study has highlighted two constraints. First, the four domains used for measurement are unbalanced in that they have differing number of indicators, which can inflate the results for one domain more than the others. Second, indicators to measure domains are not explicitly weighted with the assumption that each indicator is important in itself. However, particularly when aggregating across domains, the larger the number of indicators within a domain, the lower the weight the indicator gets. This means that individual indicators in the domains of human security and exchange freedom and implicitly weighted lower than the domains of access and social capital.

Given the nature of vulnerability in Afghanistan, Chapter 5 highlights possible strategies that can be used to respond to it. The chapter begins by arguing that response mechanisms in post-conflict environments usually constitute coping strategies as opposed to risk mitigation and prevention strategies, which are prevalent in the pre-shock stage. Coping strategies can consist of informal risk-sharing arrangements, market-based measures and formally mandated policies. When a shock has a covariate nature i.e. it affects the population as a whole, as is the case after the occurrence of a conflict, the effectiveness of informal risk-sharing arrangements is limited since all households within such an environment face a shortage of entitlements. Market-based measures usually take the form of insurance that can be purchased on the private market. However, such measures may not be effective in post-conflict environments because markets are fragmented and under-developed, risk premiums are high and entry into the market requires an initial endowment of assets, which vulnerable households usually do not own. This implies that though fraught with problems of their own, formal publically mandated measures are usually the only option available to reduce vulnerability.

Government initiatives to reduce vulnerability in post-conflict environments can include subsidies, food based safety nets and cash transfers. Subsidies facilitate access to specific entitlements but not only do they distort incentives, they do little to improve household abilities to convert other entitlements into functionings. Food based safety nets increase food entitlements at the micro-level but they do not improve multidimensional entitlements. Their impact on reducing exposure to risk is also limited to cases where food aid is distributed through food-for-work types of programmes. In terms of reducing overall vulnerability, while food based safety nets are better than subsidies, their impact is also limited. Chapter 5 argues that in order to reduce multidimensional vulnerability in post-conflict environments, the most effective instrument is cash transfers. The cash transfer element allows households the freedom to choose the entitlements they wish to utilise. In terms of reducing exposure to risk, cash transfers provide temporary relief but with a high potential to achieve long term goals of sustainable development. In this way, their impact on reducing vulnerability is relatively higher than other types of interventions.

Chapter 5 analyses the effectiveness of a specific type of cash transfer programme – workfare programme, in reducing post-conflict vulnerability. Workfare programmes are distinct from public works programmes. They promote goals of long term development, focusing on use of labour-based as opposed to labour-intensive construction techniques. The main advantage of workfare programmes is that they allow implementing agencies to undertake multiple jobs with one shovel: income transfer, infrastructure construction/rehabilitation and institutional strengthening and capacity building. They do have negatives – are expensive and administratively complex to implement. Because of the nature of work to be undertaken, they automatically promote employment for able-bodied men and are usually most effective when other employment opportunities are low.

Using focus group data collected from Afghanistan in 2005, the Chapter analyses the impact of the National Emergency Employment Programme (NEEP), a nation-wide workfare programme implemented by the Government of Afghanistan in 2002. The findings from interviews reveal that, while regional diversity exists in the impact, generally NEEP has had a positive effect on beneficiary populations. Infrastructure creation has facilitated inter-provincial trade by providing connectivity to lucrative and bigger markets. Road construction helps improve asset value of land located along the road. Improved roads facilitate access to vocational education and grazing lands. Income transfer helped drought victims and returning refugees to stabilise incomes in the West. In the Southeast, the Programme provided employment for youth who were facing psychological problems and in the North, the Programme helped transfer incomes to women, especially widows.

Using the example of NEEP, the chapter concludes that workfare programmes have three levels of impact (governments, communities and individuals/households or micro-levels) over two stages. The primary impact on governments is to garner political legitimacy and help build capacity. Communities benefit from the implementation of workfare programmes through the promotion of community development and enhancement of social capital. At the micro-level, the primary impact of workfare programmes is the augmentation of household/individual incomes through cash transfers. The secondary impact of workfare programmes for the Government is that they help achieve poverty

reduction; at the community level, such programmes help strengthen trust relations by fostering accountability and ownership in the development process; and, at the micro-level, such programmes improve household/individual capabilities to utilise entitlements.

The discussion presented in Chapter 5 identifies the broad categories of impact that NEEP has had. The subsequent chapters in this research explore two of these – income transfer and rehabilitation/reconstruction of infrastructure, in detail. In order to ascertain the extent to which NEEP helps enhance household incomes in Afghanistan, it is important to determine the opportunity costs of participating in the Programme. The real income gained through NEEP is the difference between the nominal income earned through participation minus the opportunity costs. Chapter 6 attempts to identify the real income gains through NEEP using propensity score matching. The chapter matches participating households with eligible non-participating households, eligibility being determined by the propensity score. Using three different types of matching techniques and after bootstrapping the results, the chapter finds that the real income transfer through NEEP is negative, but it is statistically insignificant. Therefore, statistically, it is not possible to conclude that participants are different from non-participants.

Chapter 6 suggests three main reasons to explain these results. First, as a flagship programme initiated by the transitional government of Afghanistan, income transfer was one of many objectives of NEEP. In the initial years of implementation, NEEP was seen i) as a vehicle to garner political legitimacy for a new government; and, ii) to build implementation capacity of the Government at the central and provincial levels. Second, NEEP activities were implemented in the summer months when other construction and agricultural activities are undertaken. Especially in 2004 and 2005, agricultural production was high due to the end of the drought. The existence of these employment opportunities increased the opportunity cost of participating in NEEP, which led to lower income gains. Finally, the main category of workers employed on NEEP consisted of able-bodied unskilled men, who are free to participate in the labour market. It is relatively easier for this group to find employment elsewhere. This increases opportunity cost of participating in NEEP. The vulnerable groups that should have participated in NEEP, such as the disabled people and women,

particularly from female headed households, are structurally excluded from participating in NEEP because of cultural constraints or the nature of work.

As mentioned above, income transfer is one aspect of workfare programmes. By making the income transfer conditional upon work done, such programmes promote other objectives of development, usually the creation or rehabilitation of infrastructure. NEEP was designed to ensure income transfer to vulnerable households, while constructing or rehabilitating rural roads in Afghanistan. Rural roads were seen as an essential feature of rural development; they would help kick-start rural economies by connecting households to markets; and they would help improve health and education outcomes by connecting households to such services. Chapter 7 investigates why and how rural households utilise roads and whether greater connectivity does indeed result in greater utilisation of markets and services. The NRVA (2005) dataset does not provide sufficient information to effectively answer these questions and for this reason a separate survey was conducted in five provinces across Afghanistan to identify patterns of rural infrastructure utilisation in Afghanistan.

The findings from the survey reveal that while rural infrastructure is necessary to improve access, it is not sufficient to ensure optimal utilisation of markets and services. Proximity to main roads makes it easier for household members to be mobile and to use motorised vehicles that not only help save time but also make travel relatively easier. In many areas of rural Afghanistan, households do not generate marketable surplus. Nevertheless, where households are able to produce larger quantities of agricultural output and they are located near a main road, it is easy to access a market and sell produce. If the household is located at a distance from the main road, extra produce is either sold in local markets at low prices, or, it is not sold at all because local markets are saturated. Productivity levels in Afghanistan are low and households visit markets more for social than trade purposes. With regards to services, better roads do improve speed of access, particularly for health services and outcomes of tertiary and vocational education. However, the quantity and quality of these services remains low. In certain areas, lack of access is one of many reasons why enrolment rates in Afghanistan are low. Other reasons such as cultural constraints also inhibit female education and the bleak prospects of employment upon completion, also discourage rural Afghans from attaining education.

Based on interviews with community members and households, Chapter 7 identifies two initiatives, which could enhance the benefits derived from rural roads. First, transport services should be improved by increasing the availability of motorised vehicles. These services should also be made more reliable to fulfil household expectations. Second, the Government of Afghanistan should formulate a comprehensive rural transport strategy, which outlines i) a coherent framework that would guide the choice of roads to be constructed or rehabilitated; ii) a comprehensive maintenance plan that will ensure sustainability of assets created; and, iii) identify other complimentary types of rural communications infrastructure that would benefit rural households, such as footpaths and footbridges.

This study began with the aim of addressing three main objectives. First, it sought to develop a workable definition of vulnerability relevant to post-conflict environments. Second, it sought to develop a methodology to measure vulnerability and apply this methodology to the case of post-conflict Afghanistan. Finally, it examined the effectiveness of workfare programmes in reducing vulnerability.

In terms of defining vulnerability, the study concludes that in post-conflict environments, vulnerability is the result of multidimensional losses, not just those of income or consumption. The multidimensionality is related to the lack of resources a household or individual owns at a point in time as well as the inability to convert these resources into an achieved state of development, also known as a functioning. While the former reflects low resilience at a point in time, the latter captures uncertainty that results from exposure to risk, experienced over time. Only households that experience deprivation across both these components can be considered vulnerable.

When measuring vulnerability, this study proposes a six-step methodology that involves identification of post-conflict losses, indicators to measure these losses, thresholds for these indicators below which a household/individual would be considered vulnerable and aggregation of these indicators into one index of vulnerability. The research argues that in the immediate aftermath of conflict, when measuring vulnerability, the chosen indicators should reflect lack of entitlements, as well as those constraints that inhibit households from converting their entitlements into achievements. Measuring vulnerability in this way is particularly relevant

because in post-conflict environments, panel data or multiple waves of cross-sectional data are usually unavailable.

In trying to assess the effectiveness of workfare programmes in reducing post-conflict vulnerability, this study finds that they have the potential to *contribute* towards vulnerability reduction. Income transfer, an inherent part of workfare programmes, helps increase resilience especially when income gains are used to enhance entitlements (productive, trade-based and labour-based). By rehabilitating/reconstructing infrastructure, workfare programmes provide access to markets and social services. In the medium to long term, such access would improve individual and household capabilities to convert their entitlements into functionings. Finally, workfare programmes enhance political legitimacy by promoting capacity building, transparency in the reconstruction process and social capital.

Using the example of NEEP in Afghanistan, this study argues that while in theory, workfare programmes are effective in reducing post-conflict vulnerability, in practice, their effectiveness is dependent upon three aspects: clarity of objectives; context-specificity of the design; and, flexibility of the implementation mechanism in incorporating the evolving needs of post-conflict environments.

Clarity of objectives: In the immediate aftermath of the conflict, NEEP, like other cash transfer programmes in similar situations, is useful to garner political legitimacy. Overloading this and similar programmes with other objectives would undermine their effectiveness. Objectives, such as ensuring positive income gains, infrastructure creation and capacity building should be emphasised, after the needs of the population have stabilised.

Context–specific design: Even-though workfare programmes are used extensively in developing countries and post-shock environments, design aspects such as wage rates, targeting methods and construction techniques should be relevant for the specific environment in which these programmes are implemented. In addition, it should be recognised that vulnerable households are those that have low entitlements and are unable to convert their entitlements into functionings. This aspect should be stressed when designing interventions to ensure that vulnerability of a household is not replaced by poverty. Also, the success of workfare programmes is

determined, to a large extent, by the nature and scope of complimentary activities. Therefore, the implementation of the programmes should be combined with other initiatives: possibly, improvement of health and education facilities, business development, development of marketing mechanisms, provision of rural transport services etc.

Flexibility of implementation mechanisms: Post-conflict needs evolve from emergency to long-term sustainable development. This evolution should be reflected in Programme objectives and design features. Implementation mechanisms should be able to incorporate these changes efficiently so that target populations derive maximum benefits from the Programme.

This study raises a number of implications for further research. First, the proposed methodology to measure vulnerability, may be explored further, with specific emphasis on the consequences of imbalanced domains. This imbalance drives results and it is important to address it to ensure greater accuracy of the calculations. Second, the study has applied the methodology to the examination of multidimensional vulnerability in post-conflict environments. Further research should be carried out to apply the methodology to non-post-conflict environments so that its relevance can be assessed. Third, it is important to examine the impact of conditionality when designing cash transfer programmes. The conditionality should be imposed only when benefit derived from it outweighs the costs of delivering it. Fourth, Programme-specific data should be collected so that participants can be effectively compared to non-participants. This would allow a more accurate application of propensity score matching and a comprehensive analysis of income gains. Finally, this research proposes a number of topics that should be explored further, which are specific to Afghanistan. First, the scope of enterprise development should be investigated with special attention given to the steps necessary to promote it. Second, the scope and dimensions of existing trade activities should be identified in order to develop additional avenues of trade. Third, the scope for inter-ministerial coordination should be investigated, with emphasis on the possibilities of linkages across various ministries of the Government of Afghanistan. This effort would facilitate holistic development, allow the Government to capture economies of scale and ensure efficient utilisation of funds. Fourth, similar research should be undertaken using more current data for Afghanistan, in order to determine how the findings change.

The occurrence of a conflict adversely affects well-being by creating multiple and widespread risks and losses. At the household level, these losses reduce human security. At the same time, they reduce the ability of households to generate and exchange productive entitlements. A shock, such as a conflict changes community structures and causes a decline in social capital, transparency and accountability. The physical destruction ensuing from a conflict, causes a decline in access to markets and services, which reinforces isolation of remote communities and can lead to a perpetuation of other losses. These losses create vulnerability at the household level by depleting resources and increasing the fragility of the environment surrounding the household.

This study argues that workfare programmes are effective in reducing post-conflict vulnerability because they help garner political legitimacy and promote institutional development. Their effectiveness could be enhanced if their design and implementation arrangements are kept simple and context-specific. However, like other safety nets, workfare programmes only address part of the problem and, for improved service delivery, need to be complemented with other interventions of rural development.

Annex A: Indicators for Assessment

A key challenge in conceptualising vulnerability has been to measure the concept. The differences in terminology can also imply different ways in which the notion is operationalised. There is, however, considerable consensus in the literature over the fact that measurement indicators should have at least three broad characteristics: first, indicators should reflect the underlying causes of vulnerability. These may be exacerbated by hazards and shocks. Second, the indicators should identify and visualise the features of vulnerability. The third characteristic of indicators is that these should focus on ways of monitoring and evaluation for impact assessment and feedback.

McLaren (1996) has developed a staged process of indicator selection. The first key step towards identifying indicators of measurement is to determine the goals for which the indicators are being selected. Clearly established goals would automatically lead to the second step: establishing scope of indicators, both spatial and temporal. Once the goals and scope of indicators are determined, it becomes easy to identify a conceptual framework that would be used to analyse the problem. The next step is to determine the selection criteria for indicators, which could include quality, measureability, data availability and robustness. These three steps determine the environment within which the indicators are to be used. A list of potential indicators is compiled from which a final list is selected. Analysis and reporting is based on these.

In order to set indicators to measure vulnerability, it is important to set priorities. This necessitates reduction of complex problems and trends to align them with goals, outputs and other requirements for assessments. On the one hand, setting priorities and simplifying complex tasks is essential to measure vulnerability. On the other hand however, if not handled with care, there is a threat that such simplification may lead to a loss of data: causes, features and aftermath of shock and how it relates to future vulnerability on the basis of baseline analysis. Moreover, practical examples of vulnerability measurement focus on ex-ante features such as prevention and mitigation. Ex-post measurement is more difficult because in the immediate aftermath of shock, there is insufficient data availability to effectively assess characteristics of vulnerability due to which, it is not possible to carry out in-depth analyses. In these scenarios, vulnerability

assessment becomes difficult and is reduced to a political interpretation of vulnerability in the context of resource allocation for relief work, humanitarian assistance and recovery.

As a solution to such problems, Pelling (2006) has distinguished between three different types of assessments. Damage assessments emphasise losses resulting from a shock. They are usually narrow in their scope and do not focus on the nature or causes of the resultant vulnerability. Such assessments usually consist of rapid needs assessments to allow rapid response mechanisms. Moreover, as Birkmann (2005) points out, such assessments do not estimate whether groups or communities were able to learn lessons. Vulnerability assessments focus on those factors that drive and shape vulnerability in a given context. Such assessments have a longer term time horizon and stress factors that determine recovery. Impact assessments are like vulnerability assessments in their scope. These highlight the positive and negative aspects of the shock as well as the environment that is created as a result of the shock. Both also attempt to make predictions of the future. While vulnerability assessments focus on the factors and coping measures that create and influence vulnerability, impact assessments are more holistic, focussing on direct as well as indirect aspects of vulnerability.

Differentiating assessments in this manner helps clarifies objectives. Moreover, Pelling stresses that whatever the nature of assessment, it is always necessary to keep in mind the question: vulnerability to what and of whom? Also, every assessment should try and bridge the gap between theoretical knowledge and practical day to day experiences of vulnerable individuals and households.

The hotspots model concentrates on two variables: hazard exposure and historical vulnerability. As a proxy to measure these, the model uses gridded population and GNP respectively. It model uses knowledge of previous losses to estimate future losses. Moreover, like the DRI, the model provides information on *risks* of mortality and economic losses and real economic losses. It does not provide information on resilience over time. The only losses considered include mortality and GNP losses, and does not include other losses, which may reduce resilience. Details of this model are published in Dilley et al. (2005) and Dilley (2006).

The Americas Project (summarised by Cardonna (2007)) was initiated to develop a language of risk and a systematic benchmarking system for the Americas. The project came up with multiple indicators, summarised in Table 1.

Table 1: The Americas Project – Indicators for Risk Assessment

Disaster Deficit Index (DDI)	Measures country risk from macroeconomic and financial perspective or stated differently, the economic resilience to recuperate from the losses that can occur from a disaster. For ex-ante measurement, losses are replaced with expected annual loss and economic resilience replaced with capital expenditures. Losses and expenditures are calculated for a defined period of time, making the conclusions more relevant. A shortcoming is that measuring resilience in terms of capital expenditures alone can be restrictive and may not capture the full picture.
Local Disaster Index (LDI)	Composite indicator that measures incidence and uniformity of risk in terms of deaths, affected population and losses. The incidence measures the intensity of the damage while the uniformity measures the spatial distribution of risks as well as losses. Indicator allows for an assessment of persistence of and cumulative impact of a hazard. It is effective for a quick evaluation of the situation, which determines the nature of quick response. A shortcoming is that the indicator is not very comprehensive in terms of capturing resilience, which is necessary for a holistic picture of the causes and consequences of vulnerability.
The Prevalent Vulnerability Index (PVI)	Composite indicator of exposure, fragility and resilience, it views vulnerability as a result of the combined impact of inadequate growth and deficiencies. Within the framework, *exposure, fragility and resilience* are represented by sub-indicators that have additional components. It is a step-wise approach that has the flexibility to capture significant amounts of information and hence the

	richness of the causes and consequences of vulnerability.
The Risk Management Index (RMI)	This index focuses on a country's risk management performance in terms of organisational development and institutional actions taken to reduce vulnerability. It helps in establishing targets and benchmarks for risk management initiatives to attain. The components of this indicator focus on the chain of risk management: identification, reduction, disaster management and financial protection. Each indicator is ranked based on five levels to ascertain performance against benchmarks/targets.

The indicators can be applied to examine ex-post vulnerability and coping strategies. The theoretical underpinnings of this approach are perhaps most similar to the concept of vulnerability developed above. Viewing post-conflict vulnerability in terms of functionings losses allows for in-depth analysis that delves in all stages of vulnerability. It begins by identifying the nature of losses (functionings), how these relate to a shortage of resources (entitlements) and the dynamic processes (capabilities) by which one leads to the other. By allowing a detailed elaboration of each stage of vulnerability, the framework suggested above becomes context specific yet replicable. It captures the nuances of vulnerability that make the concept distinct in itself by defining it as a combination of exposure to risk *as well as* a lack of entitlements. The framework effectively captures the ideas of internal and external defencelessness, specifying indicators for measuring each state, thereby making these notions more concrete.

These measurement techniques have a number of limitations. They emphasise ex-ante estimation to determine preparedness and plan prevention and mitigation measures. Post-conflict environments, by definition, imply ex-post analysis of a situation and focus on coping strategies. Conflict Analysis Frameworks (CAFs), usually adopted by international and other non-governmental organisations, fall prey to the caveat pointed out by Chambers: they substitute poverty for vulnerability. While such substitution allows for convenient and rapid assessment, it does not outline fully the causes and consequences of vulnerability. Also, they are restrictive in terms of variables they include, which makes it difficult to get a holistic picture of vulnerability, its causes and manifestation.

Annex B: Evolution of the NRVA

During the late 1990s, WFP utilised the Vulnerability Assessment Mapping (VAM) exercise primarily to track the situation of food security in Afghanistan. VAM assessments were specific and provided localised information resulting in the Emergency Food Needs Assessments (EFNA). In the post-war period, it was realised that the needs of the population were constantly evolving, making the VAM assessment insufficient. In 2003, a joint stakeholder review was conducted with participants representing various ministries in Afghanistan, Central Statistics Office (CSO), NGOs and international organisations (Pinney 2004). This review identified six broad categories of questions that needed to be answered in the new post-war context. First, as obvious, the range of indicators had to be broadened to capture new needs and a wider range of output products driven by priorities of new national programmes. Second, a greater number of women were involved in this stakeholder analysis, making it more gender sensitive and reflective of the needs of the female population. Third, whereas VAM was predominantly about rural communities, a need was identified to highlight the vulnerability faced by the urban poor, nomadic populations and the internally displaced people. Fourth, better research techniques were being adopted and used to design, enumerate and tabulate the data. Related to this is the fifth category, which pertained to improving capabilities within ministries and each stakeholder group. Better staff in ministries and international donor organisations implied that bolder methodologies could be adopted to conduct the vulnerability assessment exercise. Finally, the nature of information that needed be collected in the post-war era necessary for providing a tool for effective analysis and benchmarking for a comprehensive follow-up to ensue was evolving.

The National Risk and Vulnerability Assessment (NRVA) built on the VAM to answer the six questions highlighted in the previous paragraph. In terms of methodological changes, the NRVA introduced different levels of analyses; at district and household levels and across wealth groups ranging from very poor, poor and medium. In addition, it included information on labour details and access to services such as health, education and markets. It adopted different instruments for soliciting data from male and female respondents, implying greater depth. More income categories were included so that individuals could provide more accurate assessments of their overall income. Finally, more groups were covered through the NRVA

exercise including urban poor, nomads and the internally displaced people. By introducing these changes, the data collected through the NRVA provided a more comprehensive picture of household entitlements when compared to the VAM, which focussed mainly on food security.

Bibliography

Acharya, S. (1998). "Labour Supply and Job Choice in an Agrarian Economy: Some Results from Maharashtra". Development Policy Review Vol. 16, pp. 153-171

Adams, L. & Emebet, K. (2005). "Breaking the Poverty Cycle: A Case-Study of Cash Interventions in Ethiopia". Humanitarian Policy Group Background Paper for "The Use of Cash and Vouchers in Emergencies"

ADRC (2005). (2006). "Total Disaster Risk Management-Good Practices". Supplement, Asian Disaster Reduction Centre

Adger, W. N., Hughes, T. P., Folke, C., Carpenter, S R. and Rockstrom, J. (2005). "Social-Ecological Resilience to Coastal Disasters." Science 309: 1036-1039.

Aguero, J. M., Carter, M. R. & Woolard, I. (2006). "The Impact of Unconditional Cash Transfers on Nutrition: The South African Child Support Grant".

Alderman, H. & Paxson, C. H. (1992). "Do the Poor Insure; A Synthesis of the Literature on Risk and Consumption in Developing Countries". Policy Research Working Papers No. 1008, The World Bank, Washington D. C.

Alderman, H. (2002). "Subsidies as a Social Safety net: Effectiveness and Challenges". Social Protection Discussion Paper Series No. 0224, The World Bank, Washington D. C.

Alkire, S. (2002a). "Valuing Freedoms: Sen's Capability Approach and Poverty Reduction". Oxford: OUP

Alkire, S. (2002b). "Dimensions of Human Development". World Development Vol 30, No. 2 pp. 181-205

Alkire, S. & Foster, J. (2007). "Counting and Multidimensional Poverty Measurement". Oxford Pocverty and Human Development Initiative

Alkire, S. (2002). "Dimensions of Human Development". World Development Vol. 30, No. 2 pp. 181-205

Alwang, J., Siegel, P. B., Steen, L. Jorgensen. (2001) "Vulnerability: A view from Different Disciplines" Social Protection Unit, Human Development Network, The The World Bank.

Armecin, G., Jere, R. B., Duazo, P., Ghuman, S., Gultiano, S., King, E. M. & Lee, N. (2006). "Early Childhood Development through an Integrated Programme: Evidence from the Philippines". Policy Research Working Paper No. 3922, The World Bank, Washington D. C.

Arpino, B., & Fabrizia, M. (2009). "The Specification of the Propensity Score in Multilevel Observational Studies". MPRA Paper No. 17407, Munich, Germany

Arun, T., Imai, K. & Sinha, F. (2006). "Does Microfinance Reduce Poverty in India? Propensity Score Matching Based on a National-level Household Data". Economics Discussion Paper, Manchester, University of Manchester

Atkinson, A. B. (2003). "Multidimensional Deprivation: Contrasting Social Welfare and Counting Approaches". Journal of Economic Inequality 1, pp. 51-65

Azam, J. P., Bevan, D., Collier, P., Dercon, S., Gunning, J. and Pradhan, S. (1994). "Some Economic Consequences of the Transition from Civil War to Peace". Policy Research Working Paper No. 1392. The World Bank, Washington

Bane, M. J. & Ellwood, D. T. (1986). "Slipping Into and Out of Poverty: The Dynamics of Spells". Journal of Human Resources, Vol. 21, No. 1

Barrett, C. B., Holden, S. & Clay, D. C. (2004). "Can Food – For Work Programmes Reduce Vulnerability". Discussion Paper #D-07/2004, Department of Economics and Resource Management Agricultural University of Norway

Barrientos, A. & DeJong, J. (2006). "Reducing Child Poverty with Cash Transfers: A Sure Thing?" Development Policy Review Vol. 24, No. 5, pp 537-552

Barrios, E. B. (2007). "Access to Rural Development: Household Perceptions on Rural Development: Can Improved Infrastructure Pave the Way Towards Sustainable Development?" Asian Development Bank Institute

Bedi, T., Coudouel, A. & Simler, K. (2007). "More than a Pretty Picture: Using Poverty Maps to Design Better Policies and Interventions". The World Bank, Washington D. C.

Bertrand, M. & Mullainathan, S. (2004). "Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labour Market Discrimination". NBER Working Paper No. 9873

Besley, T. & Coate, S. (1992). "Workfare vs. Welfare: Incentive Arguments for Work Requirements in Poverty Alleviation Programmes". The American Economic Review, Vol. 82, No. 1, pp 249-261

Bery, S., Gupta, D. B., Krishna, R. and Mitra, S. "The Nature of Rural Infrastructure Problems and Prospects". Introductory Chapter of the India Rural Infrastructure Report to be published by the National Council of Applied Economic Research (NCAER)

Bhattamishra, R. & Barett, C. B. (2008). "Community-based Risk Management Arrangements". Cornell University

Bigman, D. & Fofack, H. (2000). "Geographical Targeting for Poverty alleviation: An Introduction to the Special Issue". The World Bank Economic Review Vol. 14, No. 1, pp. 129-45

Birkmann, J. (ed.) (2007). "Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies". United Nations University Press

Birkmann, J. (2006). "Measuring Vulnerability to Promote Disaster-Resilient Societies: Conceptual Frameworks and Definitions." In 'Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies' by J. Birkmann (Ed), United Nations University Press.

Birkmann, J. (2005). "Danger Need Not Spell Disaster But How Vulnerable Are We?" Research Brief, Institute for Environment and Human Security, United Nations University.

Blaikie, P. et al. (1994). "At Risk: Natural Hazards, People's Vulnerabilities and Disasters." First Edition, London: Routledge.

Blanchard, W. (2005). "Select Emergency Management – Related Terms and Definitions". Vulnerability Assessment Techniques and Applications (VATA) Coastal Services Centre, National Oceanic and Atmospheric Administration

Bodewig., C. (2002). "Emerging from Ethnic Conflict: Challenges for Social Protection Design in Transition Countries". Social Protection Discussion Paper Series No. 0229. The World Bank, Washington.

Bodewig., C. (2002). "Emerging from Ethnic Conflict: Challenges for Social Protection Design in Transition Countries". Social Protection Discussion Paper Series No. 0229. The World Bank, Washington.

Bohle, H,-G. (2001). "Vulnerability and Criticality: Perspectives from Social Geography." IHDP Update 2/2001, Newsletter of the International Human Dimensions Programme on Global Environmental Change: 1-7

Bolin, R., and Stanford, L. (1998). "The Northridge earthquake: Vulnerability and Disaster". Routledge London

Borraz, F. & Gonzalez, N. (2009). "Impact of the Uruguayan Conditional Cash Transfer Programme". Cuadernos de Economia, Vol. 46, November, pp 243-271

Bourguignon, F., & Chakravarty, S. (2003). "The measurement of Multidimensional Poverty". Journal of Economic Inequality 1, pp. 25-49

Bradhan, P. (1995). "Research on Poverty and Development Twenty Years after Redistribution with Growth." In Bruno and Pleskovic (eds) 1995, pp. 59 – 72

Brand, J. & Halaby, C. (2003). "Regression and Matching Estimates of the Effects of Elite College Attendance on Career Outcomes". Working Paper, University of Wisconsin Madison

Brauch, H. G., (2005). "Threats, Challenges, Vulnerabilities and Risks in Environmental and Human Security." Institute of Environmental and Human Security, Studies of the University: Research, Counsel, Education Publication Series Paper No. 1/2005.

Briguglio, L., Cordina, G., Farrugia, N. and Vella, S. (2008). "Economic Vulnerability and Resilience: Concepts and Measurements." United Nations University World Institute for Development Economics Research (UNU-WIDER) Research Paper No. 2008/55

Brown, G., Langer, A. and Stewart, F. (2007). "A Typology of Post-Conflict Environments: An Overview". United Nations Development Programme

Bruck, T. (2004). "Coping Strategies in Post-War Rural Mozambique". Households in Conflict Network Working Paper No. 2, School of Social Sciences and Cultural Studies, University of Sussex, U. K.

Brushett, S. and John-Abraham, I. (2006). "Infrastructure for Improved Rural Livelihoods." En Breve No. 93, The World Bank, Latin America and Caribbean Region

Bryson, A. (2002). "The Union Membership Wage Premium: An Analysis Using Propensity Score Matching". Centre for Economic Performance Discussion Paper No. 530, London

Bryson, A., Dorsett, R., & Purdon, S. (2002). "The Use of Propensity Score Matching in the Evaluation of Labour Market Policies". Department for Work and Pensions, Working Paper No. 4

Bryceson, D. F., Davis, A. S. C., Ahmed, F. and Bradbury, T. (2004). "Improving Rural Road Networks – How do Poor People Benefit?" in "Framework for the Inclusion of Social Benefits in Transport Planning: Final Report", Unpublished report by the Transport Research Laboratory for DFID.

Caliendo, M. & Kopeinig, S. (2005). "Some Practical Guidance for the Implementation of Propensity Score Matching". IZA Discussion Paper No. 1588, Institute for the Study of Labour, Bonn, Germany

Chronic Poverty Research Centre (2007). "Social Protection Transfers for Chronically Poor People". Policy Brief No. 2

Coady, D., Grosh, M. & Hoddinott, J. (2002). "The Targeting of Transfers in Developing Countries: Review of Experience and Lessons". The World Bank and International Food Policy Research Institute, Washington D. C.

Coady, D. (2004). "Designing and Evaluating Social Safety Nets: Theory, Evidence, and Policy Conclusions". FCND Discussion Paper No. 172, International Food Policy Research Institute, Washington D. C.

Cappellari, Lorenzo, and Jenkins, Stephen P. (August 2006). "Summarising Multiple Deprivation Indicators", ISER Working Paper 2006-40, Colchester: University of Essex

Carbonnier, G. (1998). "Conflict, Postwar Rebuildign and the Economy". The War-Torn Societies Project, Occasional Paper Number 2, Programme for strategic and International Security Studies, UNRISD

Cardonna, O. D. (2006) "A system of Indicators for Disaster Risk Management in the Americas". In 'Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies' by J. Birkmann (Ed), United Nations University Press.

Cardonna, O. D. (2003). "The Need for Rethinking the Concepts of Vulnerability and Risk from a Holistic Perspective: A Necessary Review and Criticism for Effective Risk Management". Chapter 3 of book 'Mapping Vulnerability: Disasters, Development and People', 2003, G. Bankoff, G. Frerks, D. Hilhorst (Ed), Earthscan Publishers, London

Chambers, R. (2006). "Vulnerability, Coping and Policy (Editorial Introduction)." IDS Bulletin, Vol. 37, No. 4, pp. 33-40.

Chambers, R. (1995). "Poverty and Livelihoods: Whose Reality Counts?" Environment and Urbanisation, Vol. 7, No. 1, pp. 173-204.

Chambers, R. (1989). "Vulnerability, Coping and Policy", IDS Bulletin, 20(2): 1-8, Brighton UK

Clarke, L. (1999). "Mission Improbable: Using Fantasy Documents to Tame Disaster". University of Chicago Press, Chicago, London

Cliffe, S., Guggenheim, S., Kostner, M. (2003) "Community-Driven Reconstruction as an Instrument in War-to-Peace Transitions". CPR Working Papers No. 7, The World Bank, Washington.

Collier, P., and Hoeffler, A. (2002). "Aid, Policy and Peace". Defence and Peace Economics 13 (6): 435-450

Conning, J. & Kevane, M. (2002). "Community-based Targeting Mechanisms for Social Safety Nets: A Critical Review". World Development Vol. 30, No. 3, pp. 375-394

Coser, L. (1956). "The Functions of Social Conflict". Glencoe, IL: Free Press

Datt, G. & Ravallion, M. (1994). "Income Gains for the Poor from Public Works Employment: Evidence from Two Indian Villages". LSMS Working Paper No. 100, The World Bank, Washington D. C.

De Neubourg, C., and Wiegand, C. (2000). "Social Policy as Social Risk Management". International Social Security Association (ISSA) Research Programme Conference on Social Security, Helsinki, 25 – 27 September 2000

Dehejia, R. H. & Wahba, S. (1999). "Causal Effects in Nonexperimental Studies: Re-evaluating the Evaluation of Training Programmes". Journal of the American Statistical Association, 94(448), pp 1053-1062

Deichmann, U., Fay, M., Koo, J. & Lall, S. (2000). "Economic Structure, Productivity and Infrastructure Quality in Southern Mexico". Policy Research Working Paper Series 2900, The World Bank, Washington D. C.

De Leon, J. C. V. (2006). "Vulnerability: A Conceptual and Methodological Review." Studies of the University: Research, Cousel, Education Publication

Series of the United Nations University, Institute of Environmental and Human Security No. 4/2006.

Dercon, S. (2005) "Vulnerability: a micro perspective." Annual Bank Conference on Development Economics, Amsterdam

Dercon, S. (2000). "Income Risk, Coping Strategies and Safety Nets". The Centre for the Study of African Economies Working Paper Series, No. 136

Deutsch, M. (1973). "The resolution of Conflict". New Haven, CT: Yale University Press.

Devereux, S. (2000). "Social Safety Nets For Poverty Alleviation in Southern Africa". ESCOR Research Report No. R7017. London, Department for International Development.

Devereux, S. (2001). "Sen's Entitlement Approach: Critiques and Counter-Critiques". Oxford Development Studies, Vol. 29, No. 2, pp. 245-263

Devereux, S. (2002). "From Workfare to Fair Work: The Contribution of Public Works and other Labour-Based Infrastructure Programmes to Poverty Alleviation". Issues in Employment and Poverty Discussion Paper No. 5, Recovery and Reconstruction Department, ILO Geneva

Diaz, J. J. & Handa, S. (2006). "An Assessment of Propensity Score Matching as a Non-experimental Impact Estimator: Evidence from Mexico's PROGRESSA Programme". Journal of Human Resources, Vol. 41, No. 2, pp 319-345

Dilley, M. (2006). "Disaster Risk Hotspots: A Project Summary." In 'Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies' by J. Birkmann (Ed), United Nations University Press.

Dilley, M., Chen, R. S., Ddichmann, U., Lerner-Lam, A. L. and Arnold, M. (2005). "Natural Disaster Hotspots: A Global Risk Analysis", Hazard Management Unit Washington D. C.: The World Bank

Doocy, S., Gabriel, M., Collins, S., Robinson, C. & Stevenson, P. "Implementing Cash for Work Programmes in Post-Tsunami Aceh: Experiences and Lessons Learned". Disasters Vol. 30, No. 3, pp 277-296

Doyal, L. & Gough, T. (1991). "A Theory of Human Need". Basingstoke: Macmillan

Dreze J., and Sen, A. K. (1991) "The Political Economy of Hunger." Oxford: Clarendon Press

Dreze, J, and Sen, A. K. (1989). "Hunger and Public Action". Oxford: Clarendon Press.

Duffield, M., Gossman, P. & Leader, N. (2002). "Review of the Strategic Framework for Afghanistan". Afghan Research and Evaluation Unit (AREU), Kabul, Afghanistan

Dulmus, C., Paglicci, L. A. R., Sarafin, D. J., Wodarshi, J. S., Feit, M. D. (2000). "Workfare Programmes: Issues and Recommendations for Self Sufficiency". Journal of Human Behaviour in the Social Environment, Vol. 3, Issue 2, pp 1-12.

Durrani, A., Ahmed, N. & Ahmed, M. (2006). "The Road from Emergency Employment Towards Integrated Rural Access: Re-Orientation of the Afghanistan National Emergency Employment Program Towards Rural Access". Discussion Paper Series Report No. 19, The World Bank, Washington D. C.

Einstein, H. H. (1988). "Landslide Risk Assessment Procedure". Proc. Fifth Int. Symposium on Landslides. Lausanne, pp. 1075 – 1090.

"Enhancing the Integrated Rural Accessibility Project through the Incorporation of Gender and Poverty Reduction Concerns." Technical Paper on Gender and IRAP 1

Essakali, M. D. (2005). "Rural Access and Mobility in Pakistan: A Policy Note". Transport Note No. TRN 28, The World Bank Washington DC

Farrington, J. & Slater, R. (2006). "Introduction: Cash Transfers: Panacea for Poverty Reduction or Money Down the Drain?" Development Policy Review Vol. 24, No. 5, pp 499-511

Fine, B. (1997). "Entitlement Failure?" Development and Change, Vol. 28, Issue 4, pp. 617-647.

Fitzgerald, E. V. K. (1997). "Paying for the War: Macroeconomic Stabilisation in Poor Countries Under Conflict Conditions". Oxford Development Studies 25(1) pp. 43-66

Fitzgerald, E. V. K. (1996). "The New trade Regime, Macroeconomics Behaviour and Income Distribution in Latin America". In V. Bulmer-Thomas, ed., "The New Economic Model in Latin America and Its Impact on Income Distribution and Poverty", New York, St. Martin's Press

Fitzgerald, E. V. K. (1987). "An Evaluation of the Economic Costs to Nicaragua of US Aggression: 1980-84". In R. J. Spalding (Ed.) "The Political Economy of Revolutionary Nicaragua", Allen and Unwin Boston, MA

Fogler, J. P., Poole, M. S. And Stutman, R. K. (1997). "Working Through Conflict: Strategies for Relationships, Groups and Organisations". 3rd Ed. NY: Addison-Wesley

Garatwa, W. And Bollin, C. (2002). "Disaster Risk Management – A Working Concept". Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ), Eschborn, http://www2.gtz.de/dokumente/bib/02-5001.pdf

Gassmann, F. & Behrendt, C. (2006). "Cash Benefits in Low-Income Countries: Simulating the Effects on Poverty Reduction for Senegal and Tanzania". Issues in Social Protection Discussion Papers No. 15

Gaude, J. & Miller, S. (1992). "Preface". International Labour Review, Vol. 131, No. 1, pp. 1

Gaude, J. & Watzlawick, J. (1992). "Employment Creation and poverty Alleviation Through Labour-intensive Public Works in Least Developed Countries". International Labour Review, Vol. 131, No. 1, pp. 3-17

Gerrard, C. (2004). "Institutional Options for Local Rural Infrastructure Services." OEDSG International Conference on Local Development Washington, D.C., June 16-18

Gobezie, G. (2009). "Sustainable Rural Finance: Prospects, Challenges and Implications." International NGO Journal Vo. 4 (2), pp. 012-026.

Gordon, D., Nandy, S. Pantazis, C., Pemberton, S. & Townsend, P. (2003). "The Distribution of Child poverty in the Developing World. Bristol: Centre for International Poverty Research

Grace, J. and Pain, A. (2004). "Rethinking Rural Livelihoods in Afghanistan." Synthesis Paper Series, Afghanistan Research and Evaluation Unit (AREU), Kabul Afghanistan

Grace, J. (2005). "Who Owns the Farm? Rural Women's Access to Land and Livestock." Working Paper Series, Afghanistan Research and Evaluation Unit (AREU), Kabul Afghanistan

Grosh, M. (1993). "Five Criteria for Choosing Among Poverty Programmes". Policy Research Working Papers No. 1201, The World Bank, Washington D. C.

Guarcello, L., Mealli, F. & Rosati, F. (2003). "Household Vulnerability and Child Labour: The Effects of Shocks, Credit Rationing and Insurance". Understanding Children's Work, Project Working Paper NO. 3, ILO, World Bank and UNICEF

Guhan, S. (1994). "Social Security Options for Developing Countries". International Labour Review, Vol. 133, No. 1, pp. 35-53

Gunatilaka, R. (1999). "Rural Infrastructure Programmes for Poverty Reduction: Policy Issues from the Sri Lankan Experience." Institute of Policy Studies, Colombo, Sri Lanka. Draft paper prepared for the "Regional Consultation on WDR 2001 for South Asia" on "Poverty Reduction and Social Progress: New Trends and Emerging Lessons", April 4-6, 1999, Rajendrapur, Bangladesh.

Handa, S. & Davis, B. (2006). "The Experience of Conditional Cash Transfers in Latin America and the Caribbean". Development Policy Review, Vol. 24, No. 5, pp 513-36

Harvey, P. (2006). "Editorial: Mini Special Issue on Cash Transfers". Disasters Vol. 30, No. 3, pp. 273-276

Harvey, P. (2005). "Cash and Vouchers in Emergencies". Humanitarian Policy Group Discussion Papers, ODI, U.K.

Heckman, J., Ichimura, H. & Todd, P. (1997). "Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme". Review of Economic Studies, 65, pp 605-654

Hejimans, A. (2001). "Vulnerability: A Matter of Perception." Benfield Greig Hazard Research Centre, University College of London.

Hitt, L. & Frei, F. (2002). "Do Better Customers Utilise Electronic Distribution Channels? The Case of PC Banking". Management Science, Vol. 48, No. 6, pp 732-748

Hoddinott, J. And Quismbing, A. (2003). "Methods for Microeconometric Risk and Vulnerability Assessments". Social Protection Discussion Paper Series No. 324, The World Bank, Washington

Holmes, R. (2009). "Cash Transfers in Post-Conflict Contexts". Project Briefing No. 32, ODI, U.K

Holzmann, R. and Jorgensen, S. (1999). Social Protection as Social Risk Management: Conceptual Underpinnings for the Social Protection Sector Strategy Paper". Social Protection Discussion Paper Series No. 9904. Social Protection Unit, Human Development Network, The World Bank, Washington

Holzmann, R., Sherburne-Benz, L. & Tesliuc, E. (2003). "Social Risk Management: The World Bank's Approach to Social Protection in a Globalising World". Social Protection Department, The World Bank, Washington D. C.

Hunte, P. and Hozyainova, A. (2008). "Factors Influencing Decisions to use Child Labour: A case-study of Poor Households in Badakhshan" Case-study Series, Afghanistan Research and Evaluation Unit (AREU), Kabul Afghanistan

ILO (1952). "World Labour Report 2000: Income Security and Social Protection in a Changing World". ILO, Geneva

International Monetary Fund (IMF) Country Report: Afghanistan, "Second Review Under the Three – Year Arrangement Under the Poverty Reduction and Growth Facility", Middle East and Central Asia Department, June 2007

Islamic Republic of Afghanistan. "Afghan National Development Strategy 1387-1391 (2008-2013). A Strategy for Security, Governance, Economic Growth and Poverty Reduction."

Jalan, J. & Ravallion, M. (1999). "Income Gains to the Poor from Workfare – Estimates for Argentina's TRABAJAR Programme". Policy Research Working Paper No. 2149, The World Bank, Washington D. C.

Janvry, A., Finan, F., Sadoulet, E. & Vakis, R. (2004). "Can Conditional Cash Transfer Programmes Improve Social Risk Management? Lessons for Education and Child Labour Outcomes". The World Bank, Washington D. C.

Janvry, A. de., Dubois, P. & Sadoulet, E. (2007). "Effects on School Enrollment and performance of a Conditional Cash Transfer Programme in Mexico". Discussion Paper No. 6069 Centre for Economic Policy Research

Jere, R. B., Cheng, Y. & Todd, P. E. (2004). "Evaluating Preschool Programmes When Length of Exposure to the programme Varies: A Nonparametric Approach". The Review of Economics and Statistics, Vol. 86, No. 1, pp 108-132

Jodha, N. S. (1988). "Poverty Debate in India: A Minority View". Economic and Political Weekly, Special Number, pp. 2421-2428

Jones, P. “The Design and Implementation of Effective Safety Nets Lessons from TRABAJAR: A Workfare Programme”, The World Bank, Washington D. C.

Kabeer, N. (2002). “Safety Nets and Opportunity Ladders: Addressing Vulnerability and Enhancing Productivity in South Asia”. Working Paper 159 Overseas Development Institute, UK

Kakwani, N. (2006). “What is Poverty?” International Poverty Centre One Pager No. 22, United Nations Development Programme.

Kakwani, N., Soares,. & Son, H. H. (2006). “Cash Transfers for School-Age Children in African Countries: Simulation of Impacts on Poverty and School Attendance”. Development Policy Review, Vol. 24, No. 5, pp. 553-569

Kaldor, M. And Vashee, B. (1997) (eds.). “New Wars”. London: Pinter

Kaldor, M. (1999). “New and Old Wars: Organised Violence in a Global Era”. Cambridge: Polity

Kanbur, R., Squire, L. (1999). “Evolution and Thinking about Poverty: Exploring the Interactions”. The World Bank, Washington.

Kantor, P. and Schutte, S. (2006). “Create More Quality Jobs with Regular Pay to Improve Livelihoods and Political Stability.” Policy Note Series, Urban Poverty Reduction in Afghanistan, Afghanistan Research and Evaluation Unit (AREU), Kabul Afghanistan.

Kantor, P. and Hozyainova, A. (2008). “Factors Influencing Decisions to use Child Labour: A case-study of Poor Households in Kabul” Case-study Series, Afghanistan Research and Evaluation Unit (AREU), Kabul Afghanistan

Keedman, W. (1998). “Of Nets and Assets: Effects and Impacts of Employment-Intensive Programmes – A Review of ILO Experience”. Development Policies Department, ILO Geneva

Kennedy, E. T. & Alderman, H. (1987). “Comparative Analyses of Nutritional Effectiveness of food subsidies and other Food-Related

Interventions". International Food Policy Research Institute and WHO-UNICEF

Kievelitz, U., Schael, T., Leonhardt, M., Hahn, H. and Vorwerk, S. (2004). "Practical Guide to Multilateral Needs Assessments in Post-Conflict Situations. A Joint UNDG, UNDP and World Bank Guide, prepared by GTZ with the Support of BMZ". Conflict Prevention and Reconstruction Paper No. 15, The World Bank

Klasen, S. (1994). ""Missing Women" Reconsidered". World Development, Vol. 22, Issue 7, pp: 1061-1071

Klasen, S. and Wink, C. (2003). "Missing Women: Revisiting the Debate". Feminist Economics Vol. 2-3, No. 9, pp. 263-299

Lewis, J. (1997). "Development, Vulnerability and Disaster reduction; Bangladesh Cyclone Shelter Projects and Their Implications." In 'Reconstruction After Disaster: Issues and Practices' Awotona, A (Ed.) Chapter 4.

Lewis, J. (1999). "Development in Disaster-Prone Places: Studies of Vulnerability." Southampton Row, London: Intermediate Technology Publications, 1999.

McCoord, A. & Wilkinson, K. (2009). "Assessing the Incidence of Public Works Programmes: Using Propensity Score Matching Technique4s to assess the Poverty Targeting of Employment in Two Public Works Programmes in South Africa". Southern Africa Labour and Development Research Unit, Working Paper No. 30, University of Cape Town

McKechnie, A. J. (2003). "Humanitarian Assistance, Reconstruction and Development in Afghanistan: A Practitioner's View." Conflict Prevention and Reconstruction Unit Working Papers No. 3, November. Social Development Department. Washington D. C.: The World Bank

MacLaren, V. W. (1996). "Urban Sustainability reporting", Journal of the American Planning Association, 62: 184-203.

Maimbo, S. M. "Building on the Informal Sector". Workshop Paper, Rural Finance in Afghanistan: The Challenge of the Opium Economy, The World Bank.

Maletta, Hector. (2003). "Women at Work: Gender, Wealth, Wages and Employment in Rural Afghanistan, 2002 – 2003". A discussion Paper. Agriculture and Animal Husbandry Information Management and Policy Unit, Ministry of Agriculture and Animal Husbandry and Food

Mansuri, G. & Rao, V. (2004). "Community-based and –driven Development: A Critical Review". World Bank Research Observer Vol. 19, No. 1, pp. 1-39

Mateus, A. (1983). "Targeting Food Subsidies for the Needy: The Use of Cost-Benefit Analysis and Institutional Design". World Bank Staff Working Paper 617, The World Bank, Washington D. C.

Mattinen, H. & Ogden, K. (2006). "Cash-based Interventions: Lessons from Southern Somalia". Disasters Vol. 30, No. 3, pp 297-315

Max-Neef, M., et al. (1989). "Human Scale Development: An Option for the Future". Development Dialogue, 5-81

Mendola, M. (2007). "Agricultural Technology Adoption and Poverty Reduction: A Propensity Score Matching Analysis for Rural Bangladesh". Food Policy, 32, pp 372-393

Ministry of Rural Rehabilitation and Developmetn and the Central Statistics Office, Kabul Afghanistan (2007). "The National Risk and Vulnerability Assessment 2005: Afghanistan".

Moser, C. (1998). "The Asset Vulnerability Framework: Reassessing Urban Poverty Reduction Strategies". World Development 26 (1), 1-19

Moser, C. (1997). "Household Responses to Poverty and Vulnerability. Volume 1: Confronting Crisis in Cisne Dos, Guayquil, Ecuador". Urban Management programme, Report 21 The World Bank Washington D. C.

Muniz, M. R. (2009). "Human Development and Autonomy in Project Aid: Experiences from Four Bilateral Projects In Nicaragua and El Salvador". Dissertation to obtain degree of Doctor at Maastricht University

Musser, L. (2002). "Vulnerability Bibliography." Centre for Science and Technology Policy Research, University of Colorado-Boulder

Morduch, J. & Sharma, M. (2001). "Strengthening Public Safety Nets: Can the Informal Sector Show the Way?" FCND Discussion Paper No. 122, Food Consumption and Nutrition Division International Food policy Research Institute, Washington D. C.

Morduch, J. (1999). "Between the state and the Market: Can Informal Insurancce Patch the Safety Net?" The World Bank Research Observer 14 (2), pp. 187-207

Morduch, J. (1995). "Income Smoothing and Consumption Smoothing". Journal of Economic Perspectives 9 (3), pp. 103-14

Narayan, D., Chambers, R., Shah, M. K. & Patesch, P. (2000). "Voices of the Poor. Crying Out for Change". New York: Oxford University Press for the World Bank

Norton, A., Conway, T., Foster, M. (2001) "Social Protection Concepts and Approaches: Implications for Policy and Practice in International Development." Centre for Aid and Public Expenditure Working Paper 143, Overseas Development Institute.

Notten, G. (2008). "Multidimensional Poverty in the Republic of Congo: Being Poor in Many Ways". Maastricht Graduate School of Governance, University of Maastricht

O'Keefe, P. (2005). "Workfare Programs in India and Internationally: Note on Issues and Experience". The World Bank Office, New Delhi, India

Parto, S., Paterson, A. and Karimi, A. (2007). "Enabling or Disabling? The Operating Environment for Small and Medium Enterprises in Rural Afghanistan." Working Paper Series, Afghanistan Research and Evaluation Unit (AREU), Kabul Afghanistan

Peduzzi, P. (2006). "The Disaster Risk Index: Overview of a Quantitative Approach." In 'Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies' by J. Birkmann (Ed), United Nations University Press.

Pelling, M. (2006). "Review of Global Risk Index Projects: Conclusions for Sub-National and Local Approaches." In 'Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies' by J. Birkmann (Ed), United Nations University Press.

Peppiatt, D., Mitchell, J. & Holzmann, P. (2001). "Cash Transfers in Emergencies: Evaluating Benefits and Assessing Risks". Humanitarian Practice Network Paper No. 35, ODI, U.K

Perkins, S. M, Wanzhu, T., Underhill, M. G., Zhou, X. H., Murray, M. D. (2000). "The use of Propensity Scores in Pharmacoepidemiologic Research". Pharmacoepidemiology and Drug Safety Vol. 9, No. 2, pp 93-101

Prowse, M. (2003). "Towards a Clearer Understanding of 'Vulnerability' in Relation to Chronic Poverty." CPRC Working Paper No. 24, Chronic Poverty Research Centre, Institute for Development Policy and Management, University of Manchester.

Pruitt, D. G. And Rubin, J. Z. (1986) "Social Conflict: Escalation, Stalemate and Settlement". New York: Random House

Rahn, P. H. (1996). "Engineering Geology – An Environmental Approach". 2nd Edition PTR Prentice Hall, Upper Saddler River

Rasmussen, S. "The Current Situation of Rural Finance in Afghanistan". Workshop Paper, Rural Finance in Afghanistan: The Challenge of the Opium Economy, The World Bank.

Ravallion, M. (1990). "Reaching The Poor Through Rural Public Employment; A Survey of Theory and Evidence". World Bank Discussion Papers 94, The World Bank, Washington D. C.

Ravallion, M. (1991). "Reaching the Rural Poor Through Public Employment: Arguments, Evidence and Lessons from South Asia". World Bank Research Observer, No. 6, pp 153-175

Ravallion, M. (1999). "Appraising Workfare". World Bank Research Observer Vol. 14, pp. 31-48

Ravallion, M, Chen, S. & Sangraula, P. (2008). "Dollar a Day Revisited". Policy Research Working Paper No. 4620, The World Bank, Washington D. C.

Roelen, K., Gassmann, F. & de Neubourg, C. (2009a). "Child Poverty in Vietnam – Providing Insights Using a Country-Specific and Multidimensional Model". Maastricht Graduate School of Governance Working Paper MGSoG/2009/WP001

Roelen, K., Gassmann, F. & de Neubourg, C. (2008). "A Global Measurement Approach Versus a Country-Specific Measurement Approach: Do They Draw the Same Picture of Child Poverty The Case of Vietnam". Maastricht Graduate School of Governance Working Paper MGSoG/2008/WP004

Rogers, B. L. & Coates, J. (2002). "Food-Based Safety Nets and Related Programmes". Social Protection Discussion Paper Series No. 0225, The World Bank, Washington D. C.

Rosenbaum, P. R. & Rubin, D. B. (1983). "The Central Role of the Propensity Score in Observational Studies for Causal Effects". Biometrika, Vol. 70, No. 1, pp 41-55.

Rubin, D. B. & Thomas, N. (1996). "Matching Using Estimated Propensity Scores: Relating Theory to Practice". Biometrics, 52, pp 249-264

Schubert, B. & Slater, R. (2006). "Social Cash Transfers in Low-Income African Countries: Conditional or Unconditional?" Development Policy Review Vol. 24, No. 5, pp 571-578

Scoones, I. (1997). "Sustainable Rural Livelihoods: A Framework for Analysis". IDS Working Paper No. 72, Brighton UK

Schelling, T. (1960) "The Strategy of Conflict". Harvard University Press

Sen, A. K. (1981). "Poverty and Famines: An Essay on Entitlement and Deprivation". Oxford University Press

Sen, A. K. (1984). "Resources, Values and Development". Cambridge MA: Harvard University Press

Sen, A. (1990). "More than 100 Million Women are Missing". New York Review of Books (12/20/90): 61-66

Sen, A. K. (1991). "Markets and Freedoms". Harvard Institute of Economic Research Working Papers 1559 Harvard Institute of Economic Research

Sen, A. K. (1992). "Inequality Re-examined". Russell Sage Foundation, Oxford University Press

Sen, A. K. (1999). "Development As Freedom". Oxford University Press.

Sen, A. (2003). "Missing Women Revisited". British Medical Journal, Vol. 327, No. 7427

Shoji, M. (2008). "How do the Poor Cope with Hardships when Mutual Assistance is Unavailable?" Economics Bulletin, Vol. 15, No. 13, pp1-17

Sharp, K. (2001). "An Overview of Targeting Approaches for Food-Assisted Programming". Atlanta, CARE USA

Shoji, M. (2008). "How do the Poor Cope with Hardships when Mutual Assistance is Unavailable?" Economics Bulletin, Vol. 15, No. 13, pp1-17

Sim, A. and Hoilund-Carlsen, M. L. (2008). "Factors Influencing Decisions to use Child Labour: A case-study of Poor Households in Herat" Case-study Series, Afghanistan Research and Evaluation Unit (AREU), Kabul Afghanistan

Sinha, S. and Lipton M. (1999). "Damaging Fluctuations, Risks and Poverty: A Review". Background Paper for the World Development Report 2000/2001. Poverty Research Unit at Sussex, University of Sussex, Brighton

Skoufias, E. & Quisumbing, A. R. (2003). "Consumption Insurance and Vulnerability to Poverty: A Synthesis of the Evidence from Bangladesh, Ethiopia, Mali, Mexico and Russia". FCND Discussion Paper No. 155, International Food Policy Research Institute, Washington

Smith, W. J. & Subbarao, K. (2003). "What Role for Safety Net Transfers in Very Low Income Countries". Social Protection Discussion Paper No. 030, The World Bank, Washington D. C.

Smith, J. (1995). "A Comparison of the Earnings Patterns of Two Samples of JTPA Eligibles" Manuscript, University of Chicago

Songco, J. A (2002). "Do Rural Infrastructure Investments Benefit the Poor? A Global View, A Focus on Vietnam." School of International and Public Affairs Columbia University and the World Bank, Vietnam.

Sorensen, B. (1998). "Women and Post-conflict Reconstruction: Issues and Sources". WSP Occasional Paper No. 3. Programme for Strategic and International Security Studies, UNRISD

Stewart, F., Humphrey, F. and Lea, N. (1997). "Civil Conflict in Developing Countries over the last Quarter of a Century: An Empirical Overview of Economic and Social Consequences". Oxford Development Studies 25 (1) 11-41

Stewart, F. (2005). "Policies Towards Horizontal Inequalities in Post-Conflict Reconstruction". CRISE Working Paper No. 7, University of Oxford

Stiefel, M. (1997). "UNDP in Conflicts and Disasters – An Overview Report of the Continuum Project". UNDP Project INT/93/709, Revised Version, mimeo, Programme for Strategic and International Security Studies, Geneva

Stock, E. A. & Veen, J. de. (1996). "Expanding Labour-based Methods for Road Works". Africa World Bank Technical Paper no. 347. The World Bank, Washington D. C.

Subbarao, K. (1997). "Public Works as an Anti-Poverty Programme: An Overview of Cross-Country Experience". American Journal of Agricultural Economics Vol. 79, pp. 678-683

Tabor, S. R. (2002). "Assisting the Poor with Cash: Design and Implementation of Social Transfer Programmes". Social Protection Discussion Paper Series No. 0223, The World Bank, Washington D. C.

Technical Paper on Gender and IRAP 1

Teklu, T. (1995). "Labour- Intensive Public Works: The Experience of Botswana and Tanzania" in Employment for Poverty Reduction and Food Security. J. von Braun(ed.),Washington DC, International Food Policy Research Institute.

Tesliuc, D. (2002). "Protecting the Vulnerable: The Design and Implementation of Effective Safety Nets". The World Bank, Washington

Tiedemann, H. (1992). "Earthquakes and Volcanic Eruptions: A Handbook on Risk Assessment". SwissRe, Geneva, Switzerland

Tjosvold, D. And Van de Vliert, E. (1994). "Applying Cooperative and Competitive Conflict Theory to Mediation". Mediation Quarterly, 11, pp. 303-311

Twigg, J. (2001). "Sustainable Livelihoods and Vulnerability to Disasters". Disaster Management Working Paper 2/2001, Benfield Greig Hazard Research Centre

Townsend, P. (1979). "Poverty in the United Kingdom." Harmondsworth, Penguin

UNDP (1996). "Human Development Report 1996." Oxford University Press, New York/Oxford

UNDP (2004). "Reducing Disaster Risk: A Challenge for Development". A Global Report. Pelling, M., Maskrey, A., Ruiz, A., Hall, L., (Eds.). John S. Swift Co. USA

UNDP (2004). "Afghanistan: Security with a Human Face, Challenges and Responsibilities". Human Development Report

UNDP Human Development Report, http://hdr.undp.org/en/statistics

UNEP (2002). "Global Environment Outlook 3 – Past, Present and Future Perspectives". Earthscan Publications Ltd. London, United Kingdom

Varley, A. (1994). "Disasters, Development and Environment." New York: John Wiley and Sons.

Vatsa, K. S. (2004). "Risk, Vulnerability and Asset-Based Approach to Disaster Risk Management". International Journal of Sociology and Social Policy Vol. 24, No. 10/11

Venter, C., Mashiri, M. and Buiten, D. (2007). "Gender and Transport: Towards a Practical Analysis Framework for Improved Planning." Department of Civil and Biosystems Engineering, University of Pretoria, Pretoria.

Verme, P. (2008). "Social Assistance and poverty Reduction in Moldova 2001-2004. An Impact Evaluation". World Bank Policy Research Working Paper No. 4658, The World Bank, Washington D. C.

Vogel, C. and O'Brien, K., (2004). "Vulnerability and Global Environmental Change: Rhetoric and Reality." AVISO – Informational Bulletin on Global Environmental Change and Human Security 13

Walker, T. S. & Ryan, J. G. (1990). "Village and Household Economies in India's Semi-Arid Tropics". Baltimore: Johns Hopkins University Press

Wall, J. A. (1985). "Negotiation; Theory and Practice". Scott, Foresman and Co., Glenview, IL

Warmington, V. (1995). "Disaster Reduction: A Review of Disaster Prevention, Mitigation and Preparedness." Ottowa: Reconstruction and Rehabilitation Fund of the Canadian Council for International Cooperation

Willibald, S. (2006). "Does Money Work? Cash Transfers to Ex-Combatants in Disarmament, Demobilisation and Reintegration Processes". Disasters Vol. 30, No. 3, pp 316-339

Wisner, B., Blaikie, P., Cannon, T. and Davis, I. (2003). "At Risk: Natural Hazards, People's Vulnerability and Disasters," Second Edition. London: Routledge.

Woolard, I. & Klasen, S. (2005). "Determinants of Income Mobility and Household Poverty Dynamics in South Africa". The Journal of Development Studies, Taylor and Francis Journals, Vol. 41, No. 5, pp 865-897

World Development Report 1990. "Poverty". The World Bank, Washington.

World Bank (1996). "Socioeconomic Influence of Rural Roads. Impact Evaluation Report." Report No. 15808-MOR. The World Bank Washington DC

World Bank (2004a). "NEEP Outcomes and Modalities". Internal Report South Asia Sector for Energy and Infrastructure, The World Bank, Islamabad

World Bank (2004b). "Poverty, Vulnerability and Social Protection in Afghanistan" (Draft). Human Development Unit, South Asia Region, World Bank, 2004.

World Development Report 2000/2001. "Attacking Poverty". The World Bank, Washington D. C.

World Bank. (2005). "Afghanistan: National Reconstruction and Poverty Reduction – The Role of Women in Afghanistan's Future". The World Bank, Washington, DC

World Bank (2006). "Microfinance and Gender Roles in Afghanistan: A Study Report". Draft, The World Bank, Kabul, Afghanistan

World Bank. 2007. "Connecting Afghanistan: A Policy Note on Rural Access in Afghanistan" (Draft).

World Bank (2007). “Transport and Gender.” Gender and Development Briefing Notes Gender and Development Group, The World Bank, Washington DC

World Bank (2007). “India Road Construction Industry: Capacity Issues, Constraints and Recommendations.” World Bank

World Bank (2008). “Social Impact Assessment: Transfer of Government Veterinary Clinics to Private Veterinarians”, Internal Report for the Afghanistan Horticulture and Livestock Project, The World Bank, Kabul, Afghanistan

Samenvatting

Kwetsbaarheid is direct gerelateerd aan het vermogen van individuen en huishoudens om hun levensstandaard in de loop van de tijd op peil te houden, daarbij rekening houdend met de risico's waaraan hun levenstandaard onderworpen is. Als huishouden dat vermogen zien afnemen dan wordt hun levenstandaard ook kwetsbaarder voor de risico's die zich eventueel materialiseren. De interactie tussen veranderingen in die risico's en in het vermogen van huishoudens om hun levenstandaard op peil te houden, vergroten mogelijkerwijze de kwetsbaarheid van mensen en hun huishoudens. Een lang aanhoudend conflict heeft negatieve gevolgen voor zowel het vermogen van mensen en huishoudens om hun levenstandaard op peil te houden en vergroot de risico's aanzienlijk. In en na een langdurend conflict verzwakken de economie, de politieke legitimiteit en de overheidsstructuren met negatieve gevolgen op de kwaliteit van het juridisch, financieel, fiscaal en administratief bestuur. De terugkeer van grote vluchtelingstromen na het conflict zet de beperkte overheidsvoorzieningen en hun gebruik verder onder druk.

Het Afghanistan van vlak na 2001 is gekenmerkt door deze situatie en werd geconfronteerd met aanzienlijke uitdagingen. De jarenlange oorlog had het land verwoest achtergelaten. De bevolking was compleet verarmd en de economie functioneerde niet; de regering was gefragmenteerd; er kwam een stroom terugkerende vluchtelingen op gang en er was een tekort aan administratieve en logistieke capaciteit voor de wederopbouw van het land. Hoewel het conflict eind 2001 officieel als beëindigd werd verklaard, was er bovendien de constante dreiging dat het conflict weer zou oplaaien. De urgentie en de complexiteit van de situatie maakt het ontwikkelen en implementeren van effectieve wederopbouwprogramma's moeilijk. Deze situatie wordt nog versterkt door het gebrek aan goede beleidsgegevens. Direct na het conflict waren de prioriteiten voor wederopbouw vooral bepaald door de politieke prioriteiten van de nationale overheid en internationale gemeenschap en bij het bepalen van die prioriteiten speelden de behoeftes van de noodlijdende en kwetsbare bevolking een geringe rol.

Centraal in dit proefschrift staat het idee dat huishoudens in de periode onmiddellijk na een conflict met een dubbel verlies te maken hebben. Het conflict zelf vermindert de voorraden en voorzieningen die een huishouden tot beschikking heeft om hun levenstandaard op peil te houden. Daardoor stijgt de armoede en wordt de weerbaarheid ten opzichte van een

toekomstige (onverwachte) schok kleiner. Ten tweede leidt een conflict tot een toename van de onzekerheid waardoor het moeilijker wordt voor huishoudens hun beperkte bestaansmiddelen in te zetten voor het op peil houden van hun levenstandaard.

Dit leidt tot de vraag naar de voorwaarden waaronder beleidsinterventies effectief zijn in het verminderen van kwetsbaarheid van de bevolking in de nasleep van een conflict. Hoe kunnen interventies de weerbaarheid versterken en tegelijkertijd de onzekerheid voor huishoudens verminderen? Om die vragen te beantwoorden is eerst een operationele definitie van 'kwetsbaarheid' gerelateerd aan het leven in een postconflict situatie, nodig. Vervolgens wordt in dit proefschrift een meetmethode voor het meten van kwetsbaarheid ontwikkeld en toegepast op gegevens van Afghanistan uit 2005. Tenslotte wordt onderzocht in hoeverre een publiek 'workfare' programma effectief is geweest in het verminderen van de kwetsbaarheid van huishoudens. Dit laatste wordt onderzocht op basis van het *National Emergency Employment Programme (NEEP),* een nationaal programma geïntroduceerd op initiatief van de Afghaanse Regering in 2002[79].

Toegenomen kwetsbaarheid in een postconflict situatie is het resultaat van achteruitgang in twee dimensies. Ten eerste hebben huishoudens beperktere bestaansmiddelen ter beschikking (verminderde weerbaarheid) en toegenomen gebrek aan mogelijkheden om deze in te zetten ten behoeve van hun welzijn (onzekerheid door het bestaan van risico's).

Het bestaan van een risico op zich lijdt niet noodzakelijkerwijze tot een vermindering van welzijn. Het is het materialiseren van het risico dat een effect heeft op het welzijn van huishoudens en individuen. Een conflict is een negatieve shock die de bestaande middelen vermindert en tegelijkertijd verhindert dat de nog aanwezige middelen in welzijn kunnen worden omgezet. Kwetsbaarheid wordt daardoor een dynamisch concept dat het

[79] Afghanistan dient in dit proefschrift als voorbeeld voor een postconflict land. Tot december 2005 heeft Afghanistan alle karakteristieke kenmerken gehad van een postconflict omgeving. Er was een vredesakkoord met het doel het geweld te beëindigen, ontwapening, demobilisatie en re-integratie van soldaten, repatriëring van vluchtelingen, het oprichten van de Afghaanse Interim Administratie (AIA) en vervolgens de Regering van de Islamitische Republiek Afghanistan. Activiteiten tot ontwikkeling en reconstructie zouden zorgen voor economisch herstel.

welzijn van huishoudens over tijd beïnvloedt. Het is het resultaat van twee verschillende componenten: de blootstelling aan een risico en de weerbaarheid in het geval dat het risico zich manifesteert als een shock. In de terminologie van Sen (1981, 1984, 1999) is de bloostelling aan een risico uitgedrukt als een vermindering van de capabiliteit, en de verminderde weerbaarheid als gebrek aan bestaansmiddelen (*entitlements).*

Kwetsbaarheid is een dynamisch concept. Het huidige welzijn alleen is onvoldoende om de kwetsbaarheid van een huishouden vast te stellen: de verandering ervan in de tijd is veel belangrijker. Dit onderscheid is belangrijk omdat onzekerheid over de toekomst medebepalend is voor het welzijn vandaag. Voor beleidsmakers betekent dit dat beleid gericht op beide componenten een langdurigere impact zal hebben.

Voor meten van kwetsbaarheid is een eendimensionaal meetconcept onvoldoende. Bestaande meetmethoden voor kwetsbaarheid hebben een aantal beperkingen. De nodige tijdreeksen zijn nauwelijks beschikbaar in de tijd na een conflict. Kwetsbaarheidprofielen zijn vaak ex-ante en doelen op risicovermindering in de context van catastrofes (disaster), daarbij buiten beschouwing latend dat kwetsbaarheid zelf het resultaat van een schok is. Kwetsbaarheid wordt vaak aan de hand van eendimensionale indicatoren zoals inkomen of consumptie gemeten. Deze indicatoren zijn beperkt en zeggen weinig over het niveau van deprivatie van huishoudens.

Om de tekortkomingen in het meten van kwetsbaarheid te omzeilen, stellen we een methode in zes stappen voor. De identificatie van domeinen waar huishoudens met een mogelijk verlies (aan vermogen en middelen) zijn geconfronteerd is stap een. Stap twee verdeelt de domeinen over de twee componenten van kwetsbaarheid zoals gedefinieerd in dit proefschrift: blootstelling aan risico's en tekort aan bestaansmiddelen. In stap drie worden voor elk domein en component meetbare indicatoren geïdentificeerd. Dit levert een totaal van 16 indicatoren voor bestaansmiddelen, en 12 indicatoren voor de verschillende risico's. Voor elke indicator wordt in stap vier een drempelwaarde gezet. Huishoudens die lager dan de drempelwaarde scoren zijn arm met betrekking tot deze indicator. Drempels zijn objectief of subjectief gekozen en geven absolute of relatieve deprivatie aan. Stap vier zet de cut off waarden welke de multi-dimensionale kwetsbaarheid bepalen. Een cut-off impliceert de aggregatie binnen een domein (intra-domein kwetsbaarheid) en over domeinen (inter-

domein kwetsbaarheid). De laatste stap is het meten van de verschillende kwetsbaarheidniveaus. Al naargelang het aantal indicatoren waarbij een huishouden onder de drempelwaarde ligt, wordt het als niet kwetsbaar, licht kwetsbaar, kwetsbaar of zeer kwetsbaar beschouwd. Voor het meten van inter-domein kwetsbaarheid krijgt elk huishouden een ranking tussen 0 and 10 waardoor de verschillende gradaties van kwetsbaarheid worden vastgesteld.

Door het toepassen van deze methodologie op Afghanistan kan worden geconcludeerd dat huishoudens in landelijke gebieden en huishoudens die tot de nomaden (Kuchi) horen het meest kwetsbaar zijn. Armoede is in het bijzonder wijd verspreid als het gaat om veilige toiletten, toegang tot schoon water en het gebruik van zuivere brandstof voor koken en verwarmen. Een groot deel van de bevolking is arm met betrekking tot het hebben van een stabiel inkomen. De oorlog in Afghanistan heeft de bestaande productie-, handels- en arbeidsmiddelen verder uitgehold en heeft tot een ineenstorting van markten en instituties geleid waardoor huishoudens hun magere middelen onvoldoende kunnen omzetten in welzijn. Huishoudens worden teruggeworpen op informele strategieën en netwerken. Toegang tot infrastructuur is beperkt waardoor diensten en markten nauwelijks gebruikt kunnen worden.

Combinaties van deprivaties in diverse domeinen komen voornamelijk voor tussen de domeinen veiligheid, sociaal kapitaal en toegang. Het zijn vooral de combinaties van deprivaties in de domeinen veiligheid en de vrijheid om handel te drijven die de huishoudens veel kwetsbaarder maken; sociaal kapitaal en toegang dragen minder aan de kwetsbaarheid bij. Een groot gedeelte van de Afghaanse huishouden zijn zowel getroffen door een gebrek aan middelen als door de onmogelijkheid om de middelen die ze hebben ook daadwerkelijk te gebruiken om hun welvaart te vergroten.

Workfare programma's zijn een voorbeeld van een bijstandsprogramma waarbij deelnemers verplicht werken om in aanmerking te komen voor een bijdrage in geld (of in nature). Workfare programma's zijn mogelijk effectief in het bestrijden van post conflict kwetsbaarheid omdat ze tegelijkertijd deelnemers van een inkomen verzekeren en de infrastructuur weder opbouwen waardoor toegang tot markten en diensten verbeterd en bestuursstructuren versterkt worden. De analyse van focus groep interviews afgenomen in Afghanistan in 2005 laten zien dat het NEEP (het

Afghaanse workfare programma) inderdaad een positief effect had op de deelnemers ondanks grote regionale verschillen. Het herstel van de infrastructuur, bijvoorbeeld wegen en straten, heeft de interregionale handel verbeterd en toegang verleend tot grotere en lucratievere markten. Wegenbouw verhoogt de waarde van het land langs de weg. Betere wegen maken het voor de plaatselijke bevolking makkelijker om onderwijs te bezoeken of om hun kuddes naar beter grasland te brengen. In het westen van Afghanistan was het inkomen verkregen uit programmadeelname belangrijk om huishoudens door droge perioden te brengen. In het Zuidoosten werd het programma gebruikt om jongeren met psychologische problemen aan het werk te krijgen, en in het Noorden was het programma vooral een inkomenssteun voor weduwen.

Het National Emergency Employment Programme in Afghanistan (NEEP) had een meetbaar effect op drie niveaus (regering, gemeentes en huishoudens/individuen) en over twee fases. De implementatie van NEEP heeft de regering van Afghanistan geholpen haar politieke legitimatie te vergroten en bestuurscapaciteit op te bouwen. Het programma werd uitgevoerd door locale organisaties waardoor NEEP de locale ontwikkeling heeft gestimuleerd en het sociale kapitaal vergroot. Op micro-niveau hebben de inkomenstransfers van NEEP de inkomens van huishoudens verbeterd. Een secondair effect op regeringsniveau is de bijdrage aan armoedevermindering, en op locaal niveau een versterkt wederzijds vertrouwen omdat het programma mede de verantwoording en "ownership" van ontwikkelingsprocessen heeft gestimuleerd. Voor de huishoudens bracht NEEP een verbetering van hun mogelijkheden om bestaansmiddelen te gebruiken en daardoor hun welzijn te bevorderen.

Het inkomen verkregen door NEEP wordt gemeten aan de hand van het *reële* inkomen dat een participerend huishouden heeft verdiend. Het *reële* inkomen is gedefinieerd als het nominale inkomen uit NEEP verminderd met de opportuniteitskosten van de deelnemer. Door het vergelijken van deelnemende en niet-deelnemende huishoudens door middel van "propensity score matching" kan worden gezegd dat de reële inkomenstransfer door NEEP insignificant is. Statistisch gezien is het niet mogelijk vast te stellen dat deelnemers zich onderscheiden van niet-deelnemers. Er zijn drie mogelijke redenen voor dit resultaat. Ten eerste was de eigenlijke inkomenstransfer via NEEP alleen één van de vele doelstellingen van dit programma dat gezien werd als "flagship"

geïnitieerd door de overgangsregering van Afghanistan. In het begin werd NEEP vooral gezien als een middel om de politieke legitimiteit van de nieuwe regering te verkrijgen en om de capaciteit om beleid te maken en uit te voeren van de regering zowel centraal als provinciaal, op te bouwen. Een tweede reden is het feit dat NEEP activiteiten vooral in de zomermaanden werden uitgevoerd, een tijd wanneer mensen sowieso bezig zijn in de bouw en op het veld. Vooral in 2004 en 2005 was de productie in de landbouw hoog omdat de lange droogte eindelijk voorbij was. Het aanbod aan werkgelegenheid heeft de opportuniteitskosten van participatie in NEEP vergroot, waardoor de uiteindelijke winst voor de afzonderlijke huishoudens kleiner was. Tot slot bestond het merendeel van NEEP deelnemers uit gezonde onopgeleide mannen die vrije toegang tot de arbeidsmarkt hebben. Deze groep kon ook elders aan de slag waardoor de opportuniteitskosten voor deelname in NEEP stegen. De kwetsbare groepen zoals mensen met een handicap of vrouwen die aan NEEP hadden moeten deelnemen waren uitgesloten van deelname of vanwege de aard van het werk (zwaar werk) of vanwege culturele redenen (vrouwen).

Om het effect van infrastructuur reconstructie via NEEP te meten zijn survey-data uit vijf Afghaanse provincies gebruikt. Er kan worden geconcludeerd dat infrastructuurwerken in rurale gebieden nodig waren om de toegang te verbeteren, maar de verbetering is onvoldoende om een optimaal gebruik van markten en diensten te stimuleren. Nabijheid tot hoofdwegen vergroot de mobiliteit van huishoudens en het gebruik van gemotoriseerde voertuigen. Dat bespaart niet alleen tijd maar vergemakkelijkt ook de reis. In veel landelijke gebieden in Afghanistan genereren boeren geen surplus dat op een markt verkoopt kan worden. Desalniettemin, waar huishoudens erin slagen grotere hoeveelheden te produceren en toegang tot een hoofdweg hebben, is toegang tot de markt verbeterd en kunnen de producten worden verkocht. Als een huishouden verder van de hoofdweg woont, wordt productieoverschot op lokale markten tegen een lagere prijs verkocht, of blijft het onverkocht omdat de markten verzadigd zijn. De productiviteit in Afghanistan is over het algemeen gesproken laag en huishoudens bezoeken markten voornamelijk uit sociale redenen en niet zozeer voor de handel. Betere wegen versnellen de toegang tot diensten, in het bijzonder de toegang tot gezondheidszorg en ze verbeteren de toegang tot voortgezet onderwijs en beroepsonderwijs. Echter, de kwantiteit en kwaliteit van deze diensten blijft laag. Gebrek aan fysieke toegankelijkheid is een van de hoofdredenen voor de lage

onderwijsdeelname in Afghanistan. Culturele barrières verhinderen de opleiding van vrouwen en de slechte uitzichten op werk voor schoolverlaters demotiveren Afghanen in landelijke gebieden om aan het onderwijs deel te nemen.

Ter verbetering van het weggebruik is het nodig om transportdiensten te verbeteren, zoals de beschikbaarheid van gemotoriseerde voertuigen. Een omvattende transportstrategie voor landelijke gebieden is wenselijk. Die strategie dient (i) het kader te scheppen om te bepalen welke straten worden gebouwd of verbeterd, (ii) een onderhoudsplan op te stellen zodat de gemaakte investeringen duurzaam zijn, en (iii) een complementair infrastructuurmodel identificeert dat ten goede komt van landelijke huishoudens, zoals voetpaden en voetgangersbruggen.

Het voorliggend onderzoek is belangrijk om drie redenen. Ten eerste draagt de studie bij tot de literatuur over de conceptualisering en het meten van kwetsbaarheid. Ten tweede geeft het inzicht in de effectiviteit van wederopbouwactiviteiten in de nasleep van een conflict wanneer de situatie gekenmerkt wordt door urgente behoeftes. Tot slot geeft dit onderzoek een raamwerk voor de analyse van kwetsbaarheid in een post conflict situatie in het kader van Sen;s 'entitlements, capabilities and functionings' waardoor de onderliggende oorzaken van kwetsbaarheid belicht worden.

Biography

Maha Ahmed was born in 1978 in Lahore, Pakistan where she grew up. She obtained her undergraduate degree from the Lahore University of Management Sciences (LUMS) in 1999, with a major in Economics and a minor in Mathematics. She started working in the Northern Areas of Pakistan with the Aga Khan Rural Support Programme (AKRSP). She was primarily involved in assessment of rural development programmes, including the role of physical infrastructure (land development, communications and power generation) and natural resource management in promoting community development.

In 2001, Maha joined the Institute of Development Studies (IDS) at the University of Sussex to pursue an MPhil in Development Studies. Her thesis analysed the role of industrial clusters in promoting export competitiveness in Pakistan.

After completing her studies at the University of Sussex, Maha returned to Pakistan, where she began working with the World Bank in Islamabad and Kabul, Afghanistan. In Pakistan, her work was focused on analysing the socio-economic impact of infrastructure provision. In Afghanistan, Maha was extensively involved in analysing the impact of the National Emergency Employment Programme (NEEP) in enhancing social protection in Afghanistan. In April 2005, Maha joint the United Nations Office for Project Services (UNOPS) where she worked as a Programme Support Officer (PSO) for the projects implemented using USAID funds. Since November 2005 till July 2006, Maha worked as a freelance consultant in Afghanistan, working mainly with the Government of Afghanistan and the World Bank to carry out evaluations of rural development programmes initiated by the Ministry of Rural Rehabilitation and Development (MRRD) in Afghanistan.

In August 2006, Maha enrolled in the Maastricht Graduate School of Governance (MGSoG) at the University of Maastricht to pursue a PhD in Public Policy and Policy Analysis. Her specific research analysed the effectiveness of workfare programmes in reducing post-conflict vulnerability. Her research has contributed towards the literature on defining and measuring vulnerability as well as the literature on policy-making to promote reconstruction in post-conflict environments.

While at the MGSoG, Maha worked as a tutor and lecturer for a number of courses taught in the Masters Programme also offered at the School. She continued her consultancy work with organisations such as World Bank and FAO, analysing the scope for rural enterprise development in Afghanistan, particularly emphasising entrepreneurship in the agricultural sector.

MGSoG Dissertation Series

K. Roelen, 2010

False Positives or Hidden Dimensions
The Definition and Measurement of Child Poverty

J. Vall Castello, 2010

Business Cycle and Policy Effects on Labour Market Transitions of Older and Disabled Workers in Spain

---

D.M. Sologon, 2010

Earnings Dynamics in Europe

M. Siegel, 2010

Money and Mobility: Migration and Remittances

J.S. Hagen-Zanker, 2010

Modest Expectations: Causes and Effects of Migration on Migrant Households in Source Countries

---

M. R. Muñiz Castillo, 2009

Human Development and Autonomy in Project Aid
Experiences from four bilateral projects in Nicaragua and El Salvador

---

C, Arndt, 2009

Governance Indicators

B. Augsburg, 2009

Microfinance – Greater Good or Lesser Evil?

G. Notten, 2008

Measuring and Managing Poverty Risks