



University for Peace
Universidad para la Paz



**Linking Natural Capital, Rural Livelihoods, and Conflict:
Toward Governance for Environmental Security
and Peace in Tajikistan**



Photo 0.a, Bakhrom-aka, Rural Farmer,
Shows Off His Wheat Harvest (Stucker, 2001)

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Abstract

Linkages between natural capital and rural livelihoods have not been adequately studied in analyses of conflict in Central Asia. Environmental degradation and depletion in predominantly rural and agricultural regions contribute to increased social conflict, as well as increased potential for violent conflict. In many cases, especially in those with authoritarian governments, lack of environmental governance capacity in the public, civil society, and business sectors is largely responsible for creating and condoning a context in which processes of natural capital loss occur.

This research paper focuses on Tajikistan, an impoverished, agricultural, and mountainous country located in southeastern Central Asia. It concludes that loss of natural capital in Tajikistan has compromised rural livelihood options and contributed to the emergence of unsustainable livelihood strategies, social conflict, especially gender inequity, and - in combination with other factors such as high rural population growth and a significant youth bulge; high unemployment of young men and women; and regionalism - a heightened probability of renewed violent conflict.

Efforts to strengthen capacity for environmental governance and promote peace are underway, but require additional support, information, and guidance. In order to be successful, development efforts must help decentralize national decision-making structures and processes; replace regionalism-based appointments and hiring practices with democratic elections and professionalism; disentangle the government and business sectors; empower small and medium sized businesses and the civil society sector; and ensure that structures and processes of environmental governance in Tajikistan are legitimate, accountable, transparent, knowledgeable, efficient, and self-sustaining.

Хулоса

Алокаҳои байни боигарии табиӣ ва зисту зиндагии кишлок дар таҳлили бархурдо дар Осиёи Миёна кофӣ омӯхта нашудаанд. Ба пасти расонидани муҳити атроф ва исрофкори, ки дар минтақаҳои кишлок ва кишоварзӣ ҳукмфармост, боиси афзудани носизихшоӣ ҷамъияти ва эҳтимол бархурдиҳои шадид ҳам гардад. Дар бисёр мавридҳо, хусусан дар мавридҳои давлатдорӣ боистибдод (автократия), набудани мақоми ҳукмронӣ муҳити атроф дар байни мардум, ҷамъияти мадания ва қисмҳои тичорати ҷавобгари талафоти боигарии табиӣ буда, баеҳамиятии онҳо офаринандаи чунин шароитҳо мегардад.

Ин қори таҳқиқоти ба Тоҷикистони фақиршуда, аграрӣ (заминӣ) ва қухистонӣ, ки дар ҷанубу-шарқии Осиёи Миёна ҷойгир аст, эътибор медиҳад. Хулоса дар ин аст, ки талафоти боигарии табиӣ зисту зиндагии кишлокхоро дар ҳатар гузошта, дар пайдоиши нотаъвоии зисту зиндагӣ, носозӣ дар ҷамъият, махсусан нобаробарии ҷинсӣ, сахми ҳудро меғузорад. Илова бар дигар амалҳои ҳамчун афзоиши теъдоди мардум, бекорӣ зиёда ҷавонон ва маҳалгарӣ, эҳтимол аз нав ба бархурдиҳои шадид овардад.

Кушишхо ба мустакхам намудани кудрати хукмронии мухити атроф ва овардани сулҳ дар Тоҷикистон ба роҳ монда шудаанд, аммо он ба дастгирии иловаги, ахборот ва роҳнамои ниез дорад. Барои комеб шудан, амалҳои зеринро ба қор овардан мумкин, яъне: кушишҳои суи таракки бояд ба сохт ва тарзҳои таксим қардани ҳукмбарории милли ери расонад, иваз қардани тарзҳои таъинот ва ба қор қабулкунӣ дар асоси маҳалгароиро бо интиҳоботҳои демократи ва мутахасиси (профессионализм), қушодани гирехҳои бастаи қисмҳои ҳукумат ва тичорат, боқувват қардонидани қисмҳои ҳурду миенаи тичорат ва ҷамъияти мадани, ва қафолат додан, ки сохт ва тарзҳои ҳукмронии атроф дар Тоҷикистон қонуни, шаффоф, бомаъсул, бомаърифат, қоромад ва пойдор мешабад.

Абстракт

Связь между природными ресурсами и жизнью в сельской местности не была достаточно изучена при анализе конфликтов в Центральной Азии. Ухудшение и истощение окружающей среды преимущественно в сельской и земледельческой местности способствуют обострению социальных конфликтов, а так же возможности возникновения насильственных конфликтов. Во многих случаях, в особенности в странах с авторитарным режимом, причиной утраты природных ресурсов является отсутствие экологического управления в государственном и гражданском обществе, а так же в бизнес сфере.

Эта работа исследует Таджикистан, обедневшая страна, занимающиеся сельским хозяйством, и находящиеся в гористой местности на юго-востоке Центральной Азии. Вывод этой работы заключается в том, что потеря природных ресурсов подвергла риску жизни в сельской местности и привела к возникновению неустойчивых стратегий по развитию, социальным конфликтам – в особенности половое неравенство – и, в сочетании с такими факторами как высокий рост местного населения, огромное количество безработной молодежи и регионализм, увеличивает вероятность к повтору насильственного конфликта.

В данный момент в Таджикистане полным ходом ведутся работы по улучшению эффективности экологического управления и по укреплению мира в регионе. Но для этих работ необходимы дополнительные поддержка, информация и управление. Для достижения успеха, работа по развитию должна помочь децентрализовать национальную структуру и процессы по принятию решений; заменить должностные назначения и наем на работу, основанный на регионализме на демократические выборы и профессионализм; разделить государственный и бизнес сектора; усилить работу малого и среднего бизнеса, а так же сектор гражданского общества; и обеспечить структуры и процессы экологического управления в Таджикистане возможностью быть легитимными, прозрачными, надежными, информированными, эффективными и самообеспечивающими.

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Table of Contents

Abstract in English, Tajik, and Russian	i
Acknowledgements	iii
Table of Contents	iv
List of Acronyms, Abbreviations, and Russian and Tajik Terms	vi
List of Figures, Maps, and Photographs	viii

Chapter 1 Introduction and Research Approach

1.1	Personal Inspiration for Research	1
1.2	Rationale for Research	2
1.3	Research and Strategy Questions	6
1.4	Research Approach	7

Chapter 2 Literature Review: Causes of Conflict in Central Asia

2.1	Defining Conflict	9
2.2	Militant Islam and Authoritarian Governments	11
	2.2.1 <i>Competing Ideologies</i>	
	2.2.2 <i>Physical and Political Landscape</i>	
	2.2.3 <i>Drug Trade</i>	
2.3	Ethnic Tensions	21
	2.3.1 <i>Inherited Borders and Natural Resources</i>	
2.4	Regionalism and Civil War in Tajikistan	24
	2.4.1 <i>Brief History of Clan Politics</i>	
	2.4.2 <i>Present-day Regional Networks</i>	
2.5	Poverty	31
	2.5.1 <i>Causes of Poverty</i>	
	2.5.2 <i>Natural Capital Loss and Unsustainable Livelihoods</i>	

Chapter 3 Sustainable Livelihoods Analysis of Rural Tajikistan

3.1	Sustainable Livelihoods Framework	38
3.2	Rural Vulnerability Context	41
	3.2.1 <i>Shocks</i>	
	3.2.2 <i>Trends</i>	
	3.2.3 <i>Seasonality</i>	
3.3	Rural Livelihoods and Natural Capital	66
	3.3.1 <i>Income Mixes and Natural Capital Holdings among Pastoral and Farming Households</i>	
	3.3.2 <i>Natural Capital Loss and Compromised Livelihood Options</i>	
3.4	Transforming Structures and Processes	98

	3.4.1	<i>Environmental Governance Structures</i>	
	3.4.2	<i>Environmental Governance Processes</i>	
3.5		Livelihood Strategies and Outcomes	110
	3.5.1	<i>Sustainable Rural Livelihood Strategies</i>	
	3.5.2	<i>Unsustainable Rural Livelihood Strategies and Rural Livelihood Outcomes</i>	
3.6		Summary and Need for Capacity Strengthening of Environmental Governance	120
Chapter 4		Strategy to Strengthen Environmental Governance in Tajikistan	
	4.1	Normative Governance Framework for Environmental Security	123
	4.2	Strategy: Strengthening, Informing, and Guiding Governance Assets	126
	4.3	Obstacles to Strategy and Related Policy Options	128
	4.4	Feasibility of Strategy	130
Chapter 5		Conclusion	
	5.1	Conclusion	135
Annex			
		Environment-Related Legislation in Tajikistan	138
Bibliography			
		On Environmental Security and Sustainable Livelihoods	143
		On Conflict and Security in Central Asia	144
		On Tajikistan: Environment, Livelihoods, Gender, and Poverty	149

List of Acronyms, Abbreviations, and Russian and Tajik Terms

AAH	Action Against Hunger
ACTED	<i>Agence d'Aide à la Coopération Technique et au Développement</i> (Agency for Technical Cooperation and Development)
ADB	Asia Development Bank
AKF	Aga Khan Foundation
<i>Akromiya</i>	Islamic social organization in Ferghana Valley
BBC	British Broadcasting Corporation
CACI	Central Asia-Caucasus Institute
CIA	Central Intelligence Agency
CIS	Commonwealth of Independent States
<i>darya</i>	river
DFID	Department for International Development
ECC	Earth Charter Commission
ECHO	European Commission Humanitarian Aid Office
EIA	environmental impact assessment
ENVSEC	Environment and Security Initiative
ESTH	Environment, Science, Technology, and Health Hub
FAO	Food and Agriculture Organization
GBAO	Gorno-Badakhshan Autonomous Oblast
GDP	gross domestic product
GTZ	<i>Gesellschaft für Technische Zusammenarbeit</i> (Agency for Technical Cooperation)
ha	hectare (100m by 100m plot of land)
HIV/AIDS	human immunodeficiency virus / acquired immune deficiency syndrome
HRW	Human Rights Watch
HT	<i>Hizb-ut-Tahrir</i> (Party of Liberation)
<i>Hukumat</i>	oblast governor and governor's office
ICG	International Crisis Group
IDP	internally displaced person
IDS	Institute for Development Studies
IFES	International Foundation for Election Systems
IFPRI	International Food Policy Research Institute
IISD	International Institute for Sustainable Development
ILO	International Labor Organization
IMU	Islamic Movement of Uzbekistan
IOM	International Organization for Migration
IRIN	Integrated Regional Information Networks
IRP	Islamic Renaissance Party
IUCN	World Conservation Union
IWPR	Institute for War and Peace Reporting
kg	kilogram
km, km ²	kilometer, square kilometer

m, m ³	meter, cubic meter
<i>mahalla</i>	neighborhood
MSF	<i>Medecins Sans Frontieres</i> (Doctors Without Borders)
NAP	National Action Plan
NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
NIC	National Intelligence Council
<i>non</i>	traditional clay-oven-baked bread
<i>oblast</i>	province, composed of districts
OSCE	Organization for Security and Cooperation in Europe
OSI	Open Society Institute
PAI	Population Action International
PRSP	Poverty Reduction Strategy Paper
<i>rayon</i>	district, subordinate to province
RRS	Rayons of Republican Subordination
SAIS	Paul H. Nitze School of Advanced International Studies
SCEPF	State Committee for Environmental Protection and Forestry
SEP	State Environmental Program
SIDA	Swedish International Development Agency
SOAS	School of Oriental and African Studies
SSC	State Statistical Committee
TJS	Tajik Somoni (approximately 3 TJS to 1 USD)
UPEACE	University for Peace
UN	United Nations
UNCED	UN Conference on Environment and Development
UNCBD	UN Convention on Biological Diversity
UNCCD	UN Convention to Combat Desertification
UNCRC	UN Convention on the Rights of the Child
UNDP	UN Development Program
UNDS	UN Division for Sustainable Development
UNECE	UN Economic Commission for Europe
UNEP	UN Environment Program
UNFCCC	UN Framework Convention on Climate Change
UNOCHA	UN Office for the Coordination of Humanitarian Affairs
UNRC	UN Resident Coordinator
UNWWAP	UN World Water Assessment Program
USGS	United States Geological Survey
USIP	United States Institute for Peace
UTO	United Tajik Opposition
WB	World Bank
WFP	World Food Program
WHH	<i>Welt Hunger Hilfe</i> (German Agro Action)
WID	Women in Development
WHO	World Health Organization
<i>zakat</i>	the giving of charity in Islam, one of the five pillars

List of Figures, Maps, and Photographs

Title Page

Photo 0.a	Bakhrom-aka, Rural Farmer, Shows Off His Wheat Harvest	0
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Chapter 1

Map 1.a	Political Map of Central Asia	3
Map 1.b	Political Map of Tajikistan	4

Chapter 2

Map 2.a	Key Areas of Radical Islamic Activities Since 1992	12
Map 2.b	Topography of Tajikistan	16
Map 2.c	Topography and Hydrography of the Ferghana Valley	17
Map 2.d	Drug Trafficking Routes Out of Afghanistan	20
Map 2.e	Ethnic Groups of Central Asia	22

Chapter 3

Fig. 3.a	Sustainable Livelihoods Framework	38
Map 3.a	Rural Population Density in Tajikistan	50
Map 3.b	Percentage of Rural Population 17 Years of Age and Older with Only Primary or No Education	52
Fig. 3.b	The Gender Gap in Education, 1998	53
Photo 3.a	Women, Girls, and Boys in Rural Tajikistan	55
Fig. 3.c	Hours Spent on Unpaid Work in the Home by Men and Women	56
Fig. 3.d	Hours Spent on Leisure by Men and Women	56
Fig. 3.e	Unemployment Rates by Age Group and Gender	57
Map 3.c	Proportion of Female-headed Households	58
Fig. 3.f	Poverty Rates and Share of Poor by Oblast, 2003	59
Fig. 3.g	Real GDP Development, 1989 = 100	60
Map 3.d	Rural Mortality Rate of Children 5 and Under by District	63
Map 3.e	Urban Mortality Rate of Children 5 and Under by Oblast	64
Map 3.f	Land Degradation in Tajikistan	68
Map 3.g	Percentage of Land Classified as Grassland	69
Fig. 3.h	Income Sources for Households in GBAO by District	70
Fig. 3.i	Irrigated Arable Land per Household in GBAO by District	73
Fig. 3.j	Number of Livestock per Household in GBAO by Wealth Quartile	75
Fig. 3.k	Tajikistan's State Emblem	76
Map 3.h	Percentage Cover of Optimal Agricultural Land	77
Fig. 3.l	Percentage of Households with Certified Land by Income Quartile in Khatlon Oblast, 2004	79
Fig. 3.m	Households with Land Access and Plot Size in Khatlon Oblast	81

Fig. 3.n	Rural Domestic Water Use per Capita per Day, 2003	82
Fig. 3.o	Availability and Use of Irrigation Canals by Rural Households in Khatlon Oblast by District	83
Fig. 3.p	Livestock Sales and Cash Income Among Households in Khatlon Oblast	85
Fig. 3.q	Percentage of Households with Livestock in GBAO that Vaccinate by Livestock Type	87
Map 3.i	Percentage of Land Classified as Forest	89
Fig. 3.r	Potato Production in GBAO by Wealth Quartile	91
Map 3.j	Tourist Assets in Tajikistan	92
Fig. 3.s	Water Consumption by Sector, 2002	94
Fig. 3.t	Erosion and Salinization of Land Resources in Tajikistan	95
Fig. 3.u	Percentage of Households Utilizing Livestock Vaccinations in Khatlon Oblast by District	97
Fig. 3.v	Structure of the State Committee for Environmental Protection and Forestry	101
Fig. 3.w	Destination of Migrants from GBAO by Sex	114
Photo 3.b	Girl Harvesting Cotton in Khatlon Oblast	117
Photo 3.c	Boy Carrying Cotton Stalks in Khatlon Oblast	118

Chapter 4

Fig. 4.a	Normative Governance Framework for Environmental Security	124
Fig. 4.b	“Very Important” Household Priorities for Improving Living Conditions	126
Fig. 4.c	Obstacles to Environmental Governance Strategy and Policy Options	128
Fig. 4.d	Number of Environmental and Health Projects in Tajikistan, 2006	132
Fig. 4.e	Number of Environmental and Health Projects with Involvement of Tajik Organizations, 2006	133

Chapter 1 Introduction and Research Approach

1.1 Personal Inspiration for this Study

Bakhrom-aka and Oisara-opa live with their three children in rural Uzbekistan, outside the former Tajik cultural center of Shakhrisabz. They own a small mud-brick home, two cows, and a few chickens. They used to sustain themselves through subsistence farming on little more than one tenth of a hectare (ha) of land, purchasing irrigation water from a neighbor who pumped it up from the local river. Oisara's meager and irregularly paid elementary school teacher's wages and Bakhrom's intermittent construction work earnings provided some income. The family still collects rainwater from their roof for drinking and cooking, and a small neighborhood bathhouse is used for weekly bathing. Their domestic water usage was probably less than 20 liters per person per day. Fortunately, the three children are able to attend school, but they spend their free time collecting eggs, milking the cows, and taking them to pasture. Each year, they miss one to two months of school while harvesting cotton for the state, receiving very little compensation. Overall, the family does not enjoy a high degree of livelihood security.

During our year as their neighbors from 2000 to 2001, my wife, Abigail, and I developed a deep respect for the family's work ethic and marveled at the smiles and conversation they shared with us in spite of hardship.

When we returned two years later, we learned that Bakhrom had migrated to Russia to work 6 months before our arrival. The garden was parched and dry stalks swayed to and fro. All the same, Oisara invited us into her guestroom with traditional Central Asian hospitality. While drinking tea and eating homemade *non*, she explained to us that she did not know where her husband was working, what type of work he had found, or when he would return. His remittances were especially important because

the government had not paid her wages in 3 months. She pointed out some repairs she had made to the guestroom's walls with some of the money.

We could only stay for a short time, and left feeling depressed and at a loss for how we could be of service to families like Bakhrom and Oisara's. Many such families exist all around the world, and my experiences living with and among them in Uzbekistan, Kyrgyzstan, and Tajikistan have inspired me to study rural livelihoods and the underlying causes of conflict and poverty.

1.2 Rationale for Research

In contemporary analyses of the factors of insecurity and conflict in Central Asia,¹ and Tajikistan in particular, loss of natural capital and unsustainable rural livelihoods are virtually ignored. Analyses primarily focus on the social fracture lines along which violence erupts - such as ideological, religious, ethnic, or regional identities - instead of delving deeper in search of the root causes of conflict. Central Asia deserves more scholarly attention, because it is often marginalized and, when studied, misunderstood by many analysts. It is a region of the world that, at this particular moment in history, could either harness its human capacity and natural resources to develop sustainably, or spiral into more acute repression, environmental degradation, poverty, and conflict.

¹ Central Asia is generally considered to be synonymous with Soviet Central Asia, which included Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. Culturally and historically, however, Afghanistan and China's Xinjiang Uighur Autonomous Region (or East Turkestan) can also be considered part of Central Asia. This latter definition is used in this paper, while recognizing that the countries most relevant to the analysis are northern Afghanistan, Tajikistan, Uzbekistan, and Kyrgyzstan.



Map 1.a, Political Map of Central Asia (UN, 2005)

Tajikistan is a pertinent and timely case study. Tajikistan remains the poorest country in Central Asia and the former Soviet Union. It has a rapidly growing population that is overwhelmingly rural and dependent for their livelihoods on natural capital, such as access to fertile land and pastures, livestock, and water. Women and men have highly differentiated gender roles and livelihood options, thus bearing hardships in different, and often inequitable, ways. The natural capital that is so vital to rural livelihoods is being degraded, depleted, and inequitably distributed through destructive or inadequate governance structures and processes. Illegal and dangerous strategies, such as child labor, human and drug trafficking, prostitution of women and children, and recruitment

of young people into militant groups are now widespread. These livelihood strategies themselves represent conflicts and are indicative of a context in which deadly conflict could re-emerge. Furthermore, it is plausible that renewed violence in Tajikistan could cause regional instability.



Map 1.b, Political Map of Tajikistan (United Nations (UN), 2004a)²

² Tajikistan is made up of four provinces or *oblasts* in addition to Dushanbe city, the capital. In the northwest, Leninobod oblast and its capital, Leninobod, were respectively renamed Sugd oblast and Khujand after independence; the Rayons of Republican Subordination (RRS) surround Dushanbe, which are administered by the country's capital; Khatlon oblast, in the southwest, resulted from the joining of Khatlon and Kulob; and, finally, mountainous Gorno-Badakhshan Autonomous Oblast (GBAO) makes up eastern Tajikistan.

At present, Tajikistan lacks the environmental governance structures and processes that would ensure the protection, equitable access, and sustainable management of natural capital for rural livelihoods. On the contrary, the country still retains a highly centralized and authoritarian government. The power that the national government wields far surpasses independent sources of governance within the private and civil society sectors. In fact, the central government, under the leadership of President Rakhmanov, controls the largest industries - aluminum and concrete production, mining, and hydropower - as well as the lucrative cotton sector. Civil society and small business enterprises are given little or no support by the national government, and the media is state-controlled. Such authoritarian forms of governance do not guarantee the support of rural livelihoods, environmental security, and peace.

In the absence of governmental capacity and questionable political will, the influence of the international community is strong. Development banks, bilateral organizations, United Nations (UN) agencies, and foreign businesses contributed over \$1 billion to Tajikistan in 2004 (United Nations Resident Coordinator (UNRC), 2006).³ This figure of donor aid and foreign direct investment amounted to over half of the country's gross domestic product (GDP) in the same year. The international donor community has an important role to play in the strategy outlined later in this paper. However, international organizations must refrain from becoming indispensable governance structures upon which Tajikistan comes to depend for assistance and funding.

³ All monetary figures are in US dollars.

1.3 Research and Strategy Questions

This research paper illuminates the linkages between natural capital, rural livelihoods, and conflict in Tajikistan. The guiding research question is: Have decreases in natural capital among rural households had negative impacts on livelihoods and precipitated social and violent conflict in post-Civil War Tajikistan? My research indicates that social conflict in Tajikistan is pervasive and deleterious, in large part due to loss of natural capital and attendant unsustainable rural livelihoods. In fact, if nothing is done to make natural capital more accessible to rural households, while properly protecting and managing it, unsustainable livelihood strategies will persist, further compromising human security by worsening the vulnerability context, and increasing the likelihood of violent conflict.

Two frameworks are employed in this paper as analytical tools. The first is the Sustainable Livelihoods Framework (Department for International Development (DFID), 1999) and the second is the Normative Governance Framework for Environmental Security (Stucker et al, 2006). The former provides a visual representation of the roles of livelihood assets - including natural capital - governance structures and processes, and livelihood options open to rural households. The latter framework emphasizes governance as “order with intent” (Stoett, lecture at the University for Peace (UPEACE), 2006), therefore placing it within the public, business, and civil society sectors. These exist within a larger societal context and draw upon essential governance assets in their decision-making processes and activities.

Using the above frameworks, rural livelihoods and environmental governance are analyzed. Lack of environmental governance capacity is identified as the most significant root cause of natural capital loss. Therefore, this paper goes on to ask the strategy question: How can capacity for environmental governance be strengthened to (1) ensure protection, equitable access, and sustainable management of natural capital, (2) support rural livelihoods, and (3) promote peace in Tajikistan? Environmental governance is recognized as being essential for moving toward environmental security, the context in which rural livelihoods can thrive sustainably and peace can be promoted. Finally, strengthening, informing, and guiding governance assets are identified as essential strategy intervention points, in an effort to ensure, among other things, that governance institutions at all levels and in all sectors adopt values of sustainable development, participatory decision-making, and gender equity.

1.4 Research Approach

As mentioned above, the Sustainable Livelihoods Framework is applied in this paper as an analytical research tool to guide research (DFID, 1999). The origin of sustainable livelihoods literature is generally attributed to Chambers and Conway (1991).

International organizations, such as Oxfam, Care, the United Nations Development Program (UNDP), and the United Kingdom's Department for International Development (DFID) have incorporated the concept into their development work (Carney et al, 1999). The framework presented at the beginning of Chapter 3 is representative of this approach (DFID, 1999).

Following the literature review in Chapter 2 on the conventionally held causes of insecurity and conflict in Central Asia, the above framework is applied in Chapter 3 to guide this paper's sub-questions. Analysis starts with the rural *vulnerability context* and moves through *livelihoods assets* and *transforming structures and processes* to *livelihood strategies and outcomes*. The need for environmental governance is emphasized and Chapter 4, applying the Normative Governance Framework for Environmental Security (Stucker et al, 2006), proposes a strategy and policy options to strengthen such governance. Finally, Chapter 5 offers a short conclusion.

Chapter 2 Literature Review: Causes of Conflict in Central Asia

Current conflict analyses of Central Asia tend to lack depth as analysts primarily focus on the manifestations of conflict, such as (2.2) militant Islam and (2.3) ethnic clashes (Hiro, 1994; Rashid, 1994; Cornell and Spector, 2002; and Akiner, 2005), instead of identifying the underlying causes, such as poverty (Smith, 2005), environmental scarcity (Homer-Dixon, 1999), and attendant unsustainable rural livelihoods (Ohlsson, 2000). Religious, ethnic, and regional identities are often wrongly cited as the sole causes of conflicts, when they should be understood as pre-existing societal fracture lines along which, under certain conditions, conflict can erupt (Kahl, 1998). Regionalism, (2.4), particularly in Tajikistan, is shown to have evolved into a form of structural violence and, in combination with other factors, a cause of conflict (Gretsky, 1995 and Olimova, 2004). While the literature identifies some of the underlying causes of conflict, (2.5) the linkages between loss of natural capital, unsustainable livelihoods, poverty, and conflict have been virtually ignored. It is precisely for this reason that this paper's research question concerning natural capital loss is so pertinent.

2.1 Defining Conflict

Both violent conflict and social conflict are significant, and this paper recognizes each where appropriate, though the literature reviewed here tends to use the former definition. In addition to violent and deadly conflict, this paper considers forms of structural violence, such as poverty, gender-based violence, class, regional power structures, and repressive and controlling national governments.

For the purpose of many analyses, conflict is defined as being violent and deadly.

Though there are a limited number of examples of such conflict in Central Asia in the waning years of the Soviet Union, most emerged after independence in 1991.⁴ Just this past May, for example, a militant group - purportedly part of the Islamic Movement of Uzbekistan (IMU) - attacked border posts and stole weaponry in northern Tajikistan and southern Kyrgyzstan before being killed, apprehended, or escaping into the mountains (Pylenko, 2006b). Though it is often problematic and controversial in such situations to ascertain how many people were killed and by whom, this type of conflict is overt and considered significant enough to be covered (or covered up) by the media.⁵

Though less overt, social forms of conflict are more widespread and exert a significant, negative impact on human security in Central Asia. Ordinary citizens bear the burden of such conflict everyday. Child labor; human trafficking and prostitution of women and children; drug trafficking and abuse; and, in certain cases, migration are all livelihood strategies that threaten human security. This paper shows that, all too often, rural households find themselves within a vulnerability context that limits their choices to unsustainable and dangerous livelihood strategies, thus perpetuating various forms of social conflict, especially along gender lines.

2.2 Militant Islam and Authoritarian Governments

⁴ Examples of deadly post-independence conflict include clashes between Uzbeks and Kyrgyz in Uzgen and Osh, Kyrgyzstan in the early 1990s; the Tajik Civil War from 1992-1997; the 1999 bombings by the Islamic Movement of Uzbekistan (IMU) in Tashkent, Uzbekistan; the kidnapping of Japanese and US citizens in 2000 in Kyrgyzstan by the IMU; the incursions of IMU forces into Kyrgyzstan and Uzbekistan from Tajikistan in 2001; the US coalition's Operation Enduring Freedom in Afghanistan from 2001 to the present; the 2004 bombings of the US and Israeli embassies in Tashkent, as well as in Bukhara; and the massacre of unarmed protesters by government forces in Andijon, Uzbekistan in 2005.

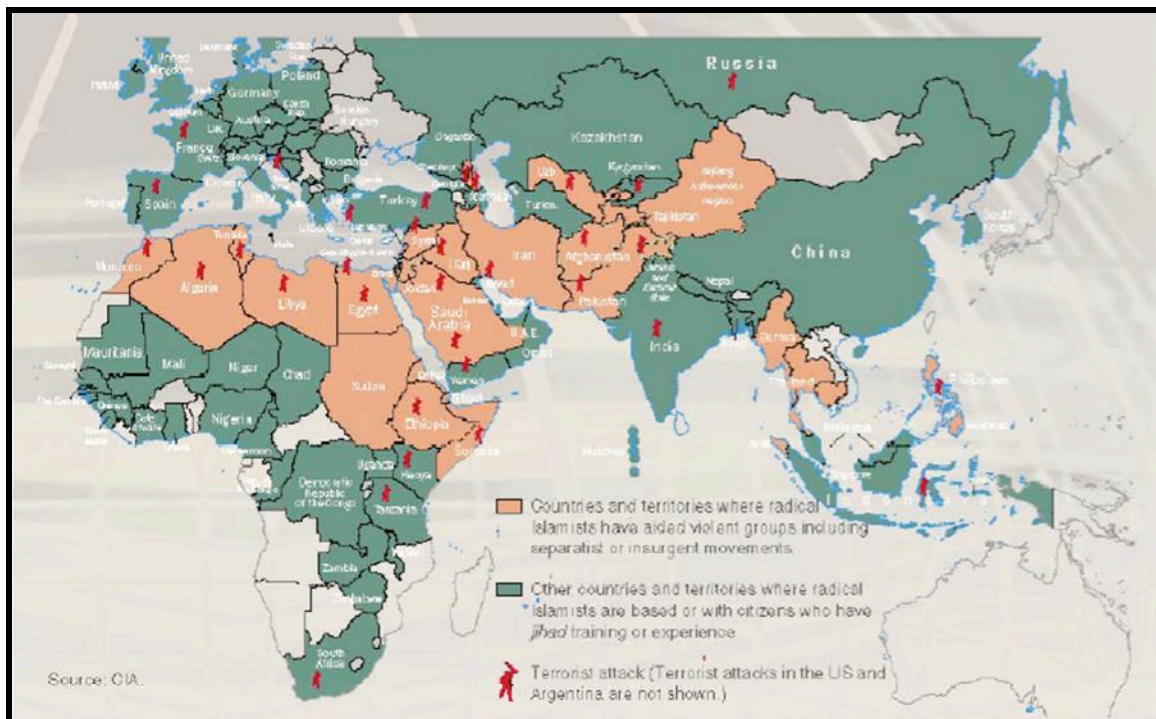
⁵ For more on recent governmental control of the media see EurasiaNet, 2005; HRW, 2005; and ICG, 2005a.

Since the collapse of the Soviet Union, many analyses of conflict in Central Asia focus on fundamentalist Islam and authoritarian governments as the main causes of conflict (Hiro, 1994; Rashid, 1994; NIC, 2004; and Baran et al, 2006). Indeed, the IMU, a predominantly Uzbek and Tajik militant group with links to the Taliban and the Northern Alliance in Afghanistan, and *Hizb-ut-Tahrir* (HT), a non-violent London-based movement originally from the Middle East, both seek to establish an Islamic state, or Caliphate, in Central Asia's Ferghana Valley and beyond (Rashid, 2000c; Cornell and Spector, 2002; and Saidazimova, 2006). The violent activities of the IMU (see footnote 4, above) are invariably directed at authoritarian governments, especially at Uzbekistan, headed by President Islam Karimov. HT, on the other hand, has found support among young intellectuals in cities who distribute leaflets to educate rural residents about Islamic alternatives to their present living standards. Membership in HT is secretive and repressed forcibly by governments, in part because such groups threaten state legitimacy by offering social services that, under the Soviet Union, were provided by the government (Saidazimova, 2006). Among other social services, such groups encourage the practice of *zakat*, or the giving of charity to those in need, which is one of the five pillars of Islam.⁶

Fundamentalist groups and repressive governments tend to become polarized and assume entrenched positions. The following sub-sections review some of the most common explanations cited by the literature for this type of polarization in Central Asia. They include competing religious and political ideologies; challenging physical and political

⁶ For more on Islamic groups engaging in charity work, see description of *Akromiya* in ICG, 2005a.

landscapes; and the Afghan drug trade. While these explanations improve the understanding of conflict in Central Asia, they fail to explore essential underlying causes of conflict, such as poverty and loss of natural capital.



Map 2.a, Key Areas of Radical Islamic Activities Since 1992 (Central Intelligence Agency (CIA) in National Intelligence Council (NIC), 2004, 82)

2.2.1 Competing Ideologies

Many analysts point out that fundamentalist and militant Islam serve to fill the ideological void left by communism. While it is true that an Islamic revival has occurred since the collapse of the Soviet Union, stronger religious identities do not, of their own accord, cause the formation of fundamentalist or militant groups. Militant Islam, however, is often perceived as the only organized form of opposition to unresponsive and

repressive governments available to the growing numbers of disenfranchised and frustrated young men (McGlinchey, 2005). Indeed, when all legitimate forms of political opposition are stifled, only illegal forms remain.

Though the literature does not adequately address the role of women in militias, analysts tend to concur that they

...form a much smaller... part of these militias. Instead, they commonly first have to forego their schooling in order to help out at home... and [become] family providers themselves in subsistence agriculture. Loss of livelihoods in subsistence agriculture predominantly undermines the social security of women and their dependents... (Ohlsson, 2000).

Leif Ohlsson bases his observations on the study of conflicts of the 1990s, while such scenarios are actually unfolding in Central Asia today. He makes it clear that just because women generally do not join militias does not mean that they are free from suffering and danger. On the contrary, the increased burdens that they shoulder threaten their health and security. Additionally, there are reports from the Institute for War and Peace Reporting (IWPR) indicating that women in Tajikistan, for example, are in fact joining professedly non-violent groups such as HT (Saiffiddinova, 2006). In May, nine women were arrested in Khujand and, in a new development, were actually sentenced to between 5 and 11 years each for their association with the group (Ibid).

More recent literature has also observed that Central Asian governments can use the existence of Islamic groups, regardless of the genuine threat they pose to the security of their countries, to legitimize politically-motivated and authoritarian military, judicial, economic, natural resource, and border and trade policies of their own (Hoffman, 2006;

Kimmage, 2006; Pylenko, 2006a; and Silverstein, 2006). Through crackdowns, torture, forced confessions, and even massacre,⁷ political opposition can be removed under the official pretext of eradicating terrorism.

If the analysis stops at identifying the primary threat to security as militant Islam, or terrorism, dangerous and counterproductive interventions can result. In an effort to eliminate the problem of militant groups, massive military operations have been employed under the banner of the United States' "War on Terror." Much of the US funding that has flowed into Central Asia, especially after increased IMU activities in the late 1990s and the terrorist attacks on the World Trade Center and Pentagon in 2001, has been aimed at training and strengthening state militaries and tightening border control (Cornell and Spector, 2002). As part of this effort, and to the detriment of local pastoralists and shuttle traders, Uzbekistan and Kyrgyzstan have mined their largely mountainous borders with Tajikistan.⁸ Unfortunately, such operations have failed in their purported aim of eliminating the threat of terrorist attacks. Some analysts and historians point out that the "War on Terror" is, in fact, a campaign of terror itself (Chomsky, 2002) and is causing havoc and destruction; abusing human rights; and, instead of creating a more secure world, is causing it to become more dangerous (Arnove and Zinn, 2002).

As indicated by the literature, a revival of religious identities and the emergence of militant Islamists is due, in part, to the ideological vacuum left by the fall of communism.

⁷ See report on Andijon, Uzbekistan, Human Right Watch (HRW), 2005.

⁸ Such mining has added to that conducted during the Civil War by government, opposition, and peacekeeping forces, bringing the total number of mines to an estimated 16,000 (OSCE, 2003). Mine explosions killed 35 people in both 2001 and 2002 (Ibid).

However, this explanation is insufficient in explaining why religious identities sometimes manifest themselves in violent ways. Further explanations are reviewed below, which, though not exhaustive, do shed more light on the subject.

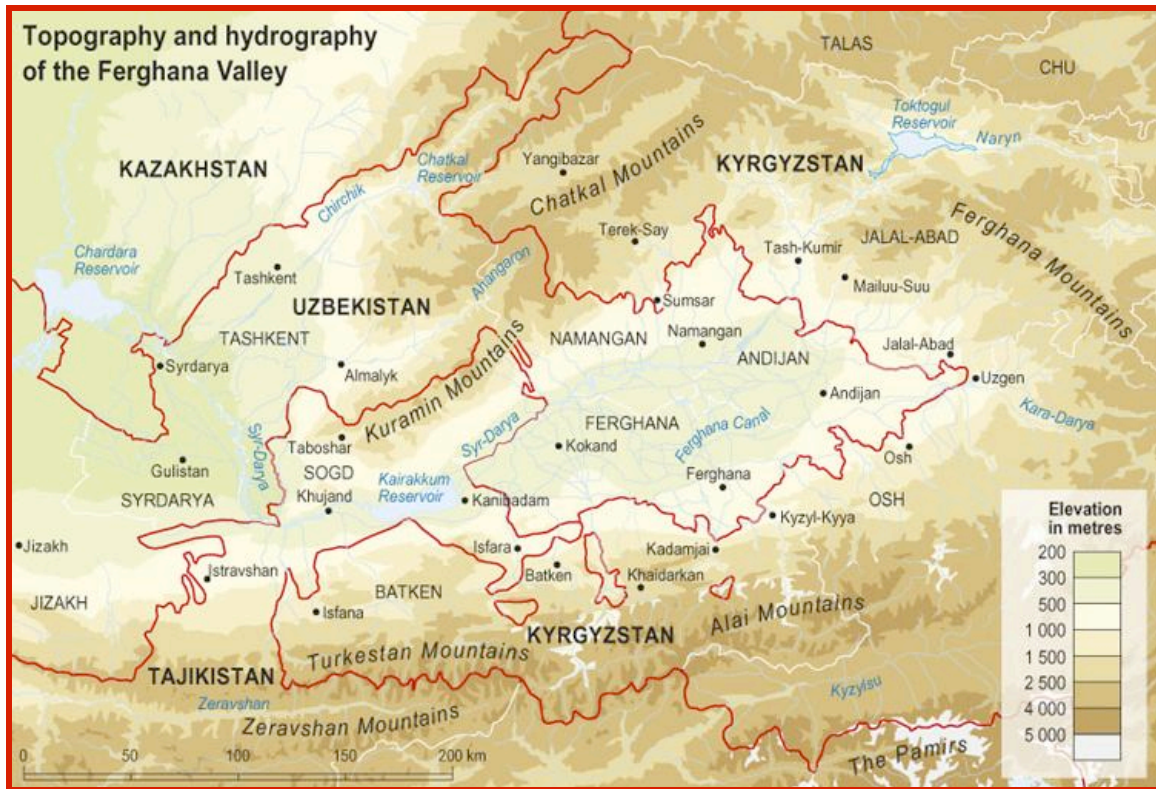
2.2.2 Physical and Political Landscape

Analysts point to the physical and political geography of Central Asia as making it especially prone to conflict (International Crisis Group (ICG), 2001). Militant groups can make use of the high and expansive Pamir and Tien Shan Mountain ranges as safe havens to establish and operate training camps and bases. Indeed, militant attacks on lower-lying areas tend to come in the spring and summer, after snow has melted from high mountain passes.



Map 2.b, Topography of Tajikistan (Shuttle Radar Topographic Mission in World Bank (WB) et al, 2005, author's text)

The mountains of Tajikistan, in particular, have been the preferred training and staging area for the IMU. Before the United States' 2001 "Operation Enduring Freedom" in Afghanistan, the IMU received generous support and training from the Taliban. Once across the Amu Darya or Pyanj Rivers, which constitute the Afghan-Tajik border, militant groups had uninterrupted passage through the mountains into southern Kyrgyzstan and Uzbekistan's Ferghana Valley beyond (Rashid, 2000d). Such activity, as noted above, still occurs to this day.



Map 2.c, Topography and Hydrography of the Ferghana Valley (Novikov and Rekacewicz, 2005 in Environment and Security Initiative (ENVSEC), 2005)⁹

Furthermore, analysts emphasize that Central Asia's place on the world's geopolitical stage renders it more susceptible to conflict. According to many analysts, Central Asia includes Afghanistan and China's Xinjiang Uighur Autonomous Province, or East Turkestan. As such, it borders on Iran and Pakistan, and attracts geopolitical attention from some of the world's most powerful nations, including Russia, China, and the United States. These external influences impact the region in a variety of ways, depending on strategic interests and regional allies. For Central Asian governments, alliances with

⁹ The large, fertile, and densely populated Ferghana Valley is primarily in Uzbekistan, though skirted by Kyrgyzstan. Its waters empty via the Syr Darya River as they pass through Tajikistan's Kairakkum Reservoir in Sugd oblast.

powerful nations mean financial support and legitimacy, often for the pursuit of alleged terrorists.

Overall, external factors further complicate Central Asia's already complex internal political power dynamics, making for a "bad neighborhood." Tajikistan, in particular, has been highly criticized by the Uzbek and Kyrgyz governments for being a weak military state, unable to control its borders and territory (Rashid, 2000b). Some analysts blame the Tajik Civil War as the main destabilizing factor in the region (Gretsky, 1995) and point out that the Tajik government, in the 9 years since signing the Peace Accords, has been unable to exert full control over its own territory.

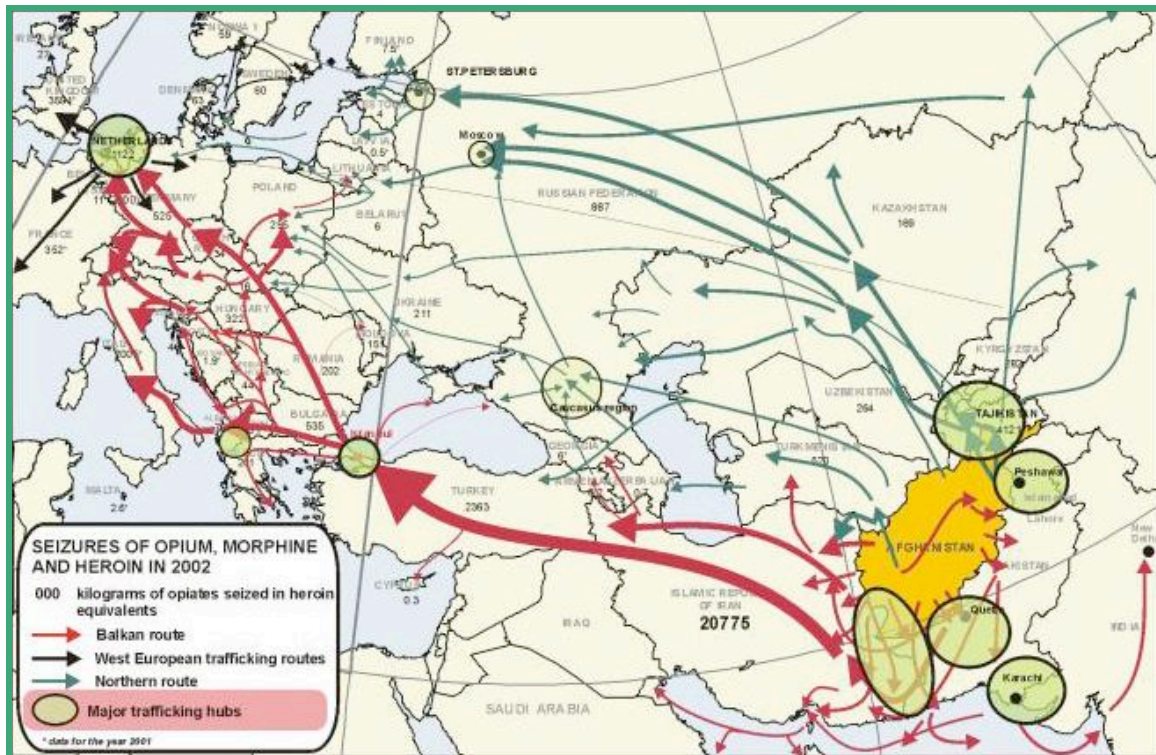
In addition to the United States and China, Russia is a major power in Central Asia. In an interesting geopolitical maneuver, Russia maintained border troops along the Afghan-Tajik border until 2004, purportedly as a political favor to Tajikistan. It seems, though, that some Russian border guards may have allowed militants to cross from Afghanistan in an effort to destabilize the region and, thereby, legitimize exerting more Russian military and political influence (Rashid, 2000d). As described below, such influence meant that the Russian military could profit from drug trafficking. Since the Russian's departure, Tajikistan's military has proven neither large enough nor well trained enough to manage its long border with Afghanistan (Pylenko, 2005). This makes Uzbekistan and Kyrgyzstan nervous about militant incursions, and has precipitated further mining of their borders with Tajikistan, as well as bolstering of guards and rigid border policies.

While a review of the physical and political landscape of Central Asia helps us better understand processes of conflict in the region, the underlying causes of the formation and activity of militant groups are not adequately researched. A salient explanation for much of the insecurity in Central Asia, the drug trade, is reviewed below. Though it, too, adds to our understanding of the causes of conflict, it does no more than allude to the existence of deeper factors, such as regionalism, poverty, and unsustainable rural livelihoods.

2.2.3 Drug Trade

The opium drug trade emanating from Afghanistan causes further insecurity in Central Asia. Proximity to Afghanistan has not only had the ideological influence discussed above, but also a commercial influence through the lucrative drug trade. Without revenues from drug trafficking, militant groups would have great difficulty operating, and both the Tajik government and Russian military would have less money in their coffers.

The Afghan drug trade is expected to yield \$3 billion this year (British Broadcasting Corporation (BBC), 2006). Indeed, at different times in recent history, Afghanistan has produced between 75 and 80% of the world's heroin (Makarenko, 2000) and production is increasing. It is reported that half of Afghanistan's heroin and opium exports are transported through Turkmenistan and Tajikistan, and that the IMU controls the majority of the drugs passing through the latter country (Ibid). The trafficking of raw opium through Tajikistan has led to the emergence of heroin laboratories (Cornell and Spector, 2002), adding value to the product before it is sold.



Map 2.d, Drug Trafficking Routes Out of Afghanistan (UNOCHA, 2004)

Furthermore, Asal Azamova of the *Moscow News*, in a May 2001 interview with Anton Surikov, a former Russian military intelligence officer, recorded the first public admission that both the Russian military and Tajik government officials were involved in and benefiting from the drug trade (2001). According to Azamova, the trucks that transported supplies and weaponry to the Northern Alliance in Afghanistan returned directly to Russia, full of drugs.¹⁰ Unfortunately, it is also reported that drug-producing warlords in northern Afghanistan have good working relationships with many Tajik border guards (UN Office for the Coordination of Humanitarian Affairs (UNOCHA), 2004).

¹⁰ Though it is beyond the scope of this paper, it is unfortunate that the literature does not thoroughly examine the role of the demand for drugs in Russian and European markets as a driving force behind the drug trade's continued existence.

The drug trade clearly finances groups and governments that engage in violent conflict, but it also has serious impacts on rural populations, ranging from illegal livelihood strategies, to drug addiction and HIV/AIDS. To date, the literature generally fails to ask: What factors underpin the existence of the drug trade? Or: Why is the production and trafficking of opium a livelihood strategy that is chosen by many rural households?

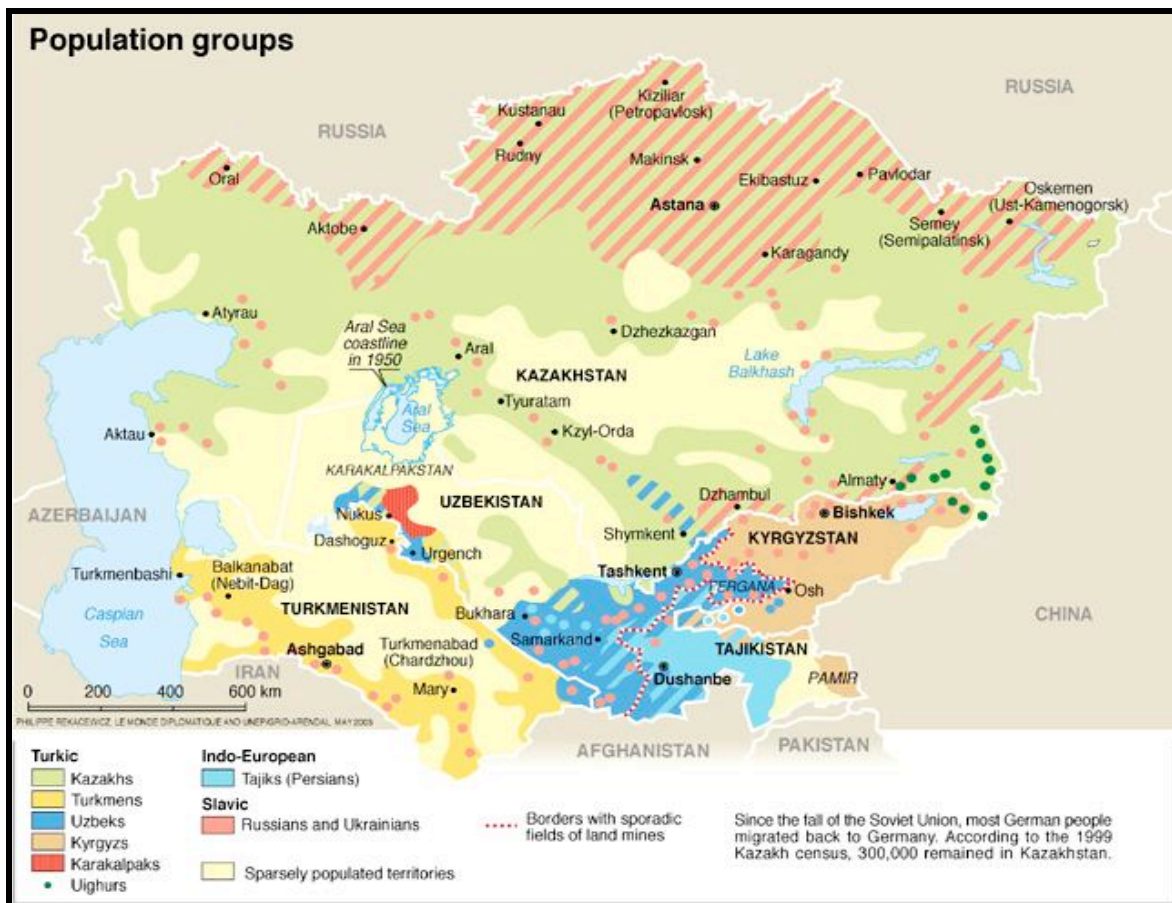
By stopping short of asking the questions that would reveal the underlying causes of conflict in Central Asia, appropriate interventions for peace are lacking. For example, few are researching or addressing the conditions that give rise to the formation of militant groups. Few are asking: How could Islam be viewed and supported in Central Asia as a force for positive change and peace? Or: In what ways could its rugged mountain geography be made into an asset for Tajikistan, instead of a liability? Asking and researching such questions would lead the discussion toward identifying interventions and policy initiatives that could mitigate conflict. This paper seeks to explore the underlying causes of these conventional security concerns.

2.3 Ethnic Tensions

2.3.1 Inherited Borders and Natural Resources

Analysts have observed that a complicating factor for ethnic tensions and conflict in Central Asia is the set of borders inherited from the Soviet Union (Gretsky, 1995). The Central Asian countries are all named after ethnicities, though their borders often exclude cities that are predominantly of the same ethnicity, while including others made up predominantly of a different ethnicity. These borders did not exist before the Soviets

took control of czarist Turkestan, dividing the region into republics. Osh, for example, is a predominantly Uzbek city, though it is located in Kyrgyzstan. Khujand has a high population of Uzbeks, but it is located in northern Tajikistan. Samarkand and Bukhara, both culturally and historically Tajik, are firmly located in Uzbek territory. Some analysts theorize that Soviet planners in Moscow drew Central Asian borders in such a way as to divide and conquer the region, maintaining some degree of ethnic tension for the sake of control (Tabyshalieva, 1999, 3). Indeed, “Soviet planners often avoided drawing more homogenous or compact republics for fear they would fuel separatism” (ICG, 2002, i).



Map 2.e, Ethnic Groups of Central Asia (Rekacewicz et al, 2003)

Soviet borders have also caused trans-boundary and local energy, water, and land disputes to take on an ethnic dimension (Asankanov, 1996). Disputes often revolve around water supply from upper riparian states (Kyrgyzstan and Tajikistan) to lower riparian states (Kazakhstan and Uzbekistan) and natural gas supplies piped in the opposite direction (ENVSEC, 2005). These resources are traded or withheld by elites for political leverage and, as such, can lead to local ethnic stereotyping and heightened tensions. Even before the collapse of the Soviet Union, serious localized ethnic clashes over natural resources resulted in deaths. For example, in 1989, several people were killed and more injured in the Kyrgyz village of Samarkandik, in close proximity to the Tajik Varukh enclave, over access to water (ICG, 2001). Furthermore, grave ethnic conflict erupted between Uzbeks and Kyrgyz over the distribution of scarce and fertile land in the predominantly Uzbek towns of Uzgen and Osh in Kyrgyzstan's Ferghana Valley in 1990 and 1992. "According to official statistics, a total of 300 people were killed and over 1,000 wounded; more than 5,000 crimes were committed, hundreds of houses were destroyed and mass rapes also occurred" (ICG, 2001, 6). The UNDP office in Kyrgyzstan, however, reported that as many as 1,000 people were actually killed (Qtd in *ibid*, 6).

While there is certainly ethnic discrimination in Central Asia, the existence of different ethnicities in a given locality does not, of its own accord, lead directly to violence. As the result of a host of factors, Tajiks are made to feel like second-class citizens in Uzbekistan; Uzbeks in Tajikistan and Kyrgyzstan (Cornell and Spector, 2002); and Uighur in China and Kyrgyzstan (Tyler, 1997). The literature recognizes such

discrimination, and has also done a good job of linking inherited borders, lack of access to natural resources, and poverty to the occurrence of ethnic conflict, slaughter, and rape. As such, appropriate interventions to mitigate ethnic violence should address these underlying factors.

2.4 Regionalism and Civil War in Tajikistan

Regional identity sometimes supersedes ethnic identity, and forms the basis for regional power structures that, especially in Tajikistan, are partly responsible for perpetuating social fragmentation and conflict. Regionalism is present in the form of clan politics in Kyrgyzstan and Tajikistan, and warlordism in Afghanistan. It is also present in Uzbekistan, though to a lesser extent, in part due to the relative lack of geographic and historical barriers in the Uzbek deserts as compared to the rugged mountains in the former countries. As a cause of conflict in Central Asia, the literature focuses primarily on regionalism in the formation of Soviet Tajikistan and in the outbreak of its post-independence Civil War (Gretsky, 1995; Khudonazar, 1995), in addition to its role in structuring current regional power dynamics in Tajikistan (Olimova, 2004). Regionalism is overwhelmingly seen as a problem and not as an asset in Tajikistan except, of course, by those who benefit from it.

In 2004, Saodat Olimova of the Sharq Center in Dushanbe wrote a report entitled *Regionalism and its perception by major political and social powers of Tajikistan* based on interviews and focus groups of politicians, academicians, journalists, and female and male university students from around the country. Among her observations was that

regionalism is defined in a relative manner, based on each individual's place of origin. The immediate local area is highly sub-divided into valleys or oases, towns, villages, neighborhoods, and even streets, while regions that are further a field are seen as homogenous. She defines regional groups as "...communities or groupings originating from the same place and united by a common dialect or sometimes language... and common identity" (Olimova, 2004, 85). She points out that ethnic identity is often subsumed by regional identity: "...the ethnic identity of the older population is almost unrecognizable... therefore Uzbeks, Tajiks and other nations living in Kulob call themselves Kulobi and, correspondingly, Tajiks, Uzbeks, Arabs and Turkmen that live in Qabodiyon call themselves Qabodiyoni" (Ibid, 86). Regionalism in Tajikistan today is an important phenomenon that causes tensions among people and has led to conflict.

2.4.1 Brief History of Clan Politics

Analysts point out that the importance of regional identity for Tajiks has historically waned and waxed (Khudonazar, 1995). The following observations are drawn from Sergei Gretskey's succinct historical summary in *Civil War in Tajikistan: Causes, Developments, and Prospects for Peace* (1995). Before the Russian czars arrived in Central Asia, present-day Tajikistan was part of the Bukharan and Khivan khanates. Great mountains divided the population into different regions, while the Tajik centers of Bukhara, Samarkand, and Shakhrisabz functioned as cultural, religious, and intellectual melting pots. In the 19th century, Russian czars subdued these two remaining Central Asian khanates and united them into the protectorate of Turkestan, further minimizing the importance of regional identities. However, when Tajikistan first came into existence

under the Soviet Union in 1924, it was an autonomous region within the borders of the Uzbek Soviet Socialist Republic. Notably, the Soviets met with the fiercest and most prolonged resistance to expansion of their empire from the Tajiks and, much later, the Afghans. It is surmised in the literature that this factor, coupled with the fact that Tashkent, Uzbekistan was to become the key administrative city of Soviet Central Asia, cost Tajiks their cultural and historic centers. As noted above, these cities lie within present-day Uzbekistan. When Tajikistan became a republic in 1929, only 300,000 of the 1,100,000 Tajiks then alive - or less than 28% - found themselves within the republic's borders (Gretsky, 1995). Without their cultural centers, the republic fragmented into a scattering of regional identities.

Under the Soviet Union, regionalism became entrenched as a key characteristic of the political power structure. Dushanbe, originally a small village in southern Tajikistan, was designated the capital, while the ruling communist elite was drawn from northern Tajikistan, called Leninabad oblast at the time. The Leninobadi, or Khujandi, maintained close trade relations with nearby Uzbekistan and used state revenues to develop their own province at the expense of the rest of the country, essentially using it for raw materials. From the 1940s onward, Khujandis "...endorsed localism [or regionalism] as the cornerstone of their policy, and kept regional rivalries boiling, while reserving for themselves the role of arbiter" (Gretsky, 1995, 221). To this day, Tajikistan is not adequately connected through road, rail, or air infrastructure. Present day Sugd oblast is only connected to the rest of the country by one road that is closed during the winter due

to snow, though air links exist for the wealthy. GBAO suffers from much greater isolation, in addition to grinding poverty.

The intensification of regionalism in Tajikistan during the Soviet period is identified by many analysts as a major cause of the Civil War (Gretsky, 1995; Khudonazar, 1995; and Olimova, 2004). When the Soviet Union collapsed in 1991, the Khujandi elite were determined to maintain their power. The hierarchical, Moscow-centered power structure, upon which the Khujandi elite depended, was in the process of falling apart and needed to be replaced by a different system. Opposition groups formed and registered as political parties. Much of the literature claims that most of them earnestly wanted to build a democratic nation-state and put regionalism to rest. These groups, along with the moderate Islamic Renaissance Party (IRP), unified as the Islamic-Democratic Opposition, which later became the United Tajik Opposition (UTO). Given their need for greater numbers, the Khujandi elite formed an alliance with the Kulobis of southern Tajikistan, a group that had previously been excluded from politics. They instigated regional tensions and fighting, eventually splitting erstwhile nationalist parties into regional factions. Neither side, however, had the arms or equipment to escalate the fighting into a civil war. In fact, in November 1992, a truce was negotiated at the Supreme Soviet session. Thus, regional identities alone failed at instigating civil war.

Unfortunately, geopolitical interests and intervention pushed Tajikistan into civil war. The Khujandi elite appealed to Uzbekistan and Russia for military intervention. Their active involvement escalated the fighting into a full blown civil war in December of

1992. Uzbek President Karimov feared that a successful Islamic-Democratic movement in Tajikistan would cause dissatisfied segments of his country's population to rise up in opposition to his government, and that the Tajiks in Bukhara and Samarkand would seek "reunification" with Tajikistan. Therefore, Karimov convinced Russian President Boris Yeltsin that militant Islam posed a serious threat to Russia's "Near Abroad," or former republics, securing military assistance. The latter was in keeping with Russia's Near Abroad policy that sought to 1) protect the interests of Russians in the former Soviet Union; 2) stop migration to Russia from former republics; and 3) maintain stability, especially on Russia's southern borders (Gretsky, 1995). Uzbekistan and Russia put their support behind the Khujandi-Kulobi alliance.

Thereafter, a regional power shift took place that is still the status quo in Tajikistan today. In a bid to balance Central Asian power between the Uzbek-backed Khujandis and Kulobis, Russia shifted its support to the latter. Through political intrigue and rigged elections, Imomali Rakhmanov, a Kulobi, went from his Khujandi-endorsed appointment as Chairman of the Supreme Soviet to President of Tajikistan in the November 1994 elections. The shift in regional power was made complete when he removed Khujandis from positions of political power and replaced them with Kulobis. The subsequent Parliamentary elections of February 1995 were similarly rigged and fraught with intimidation and exclusion of opposition candidates. Having since altered Tajikistan's Constitution, Rakhmanov is still President to this day. A member of the President's Office summed up the role of regionalism in the country by stating that governance is all

about regionalism (Olimova, 2004, 95), meaning that regional power structures permeate all governance, especially the national level.

2.4.2 Present-day Regional Networks

Regionalism today not only permeates governmental structures, but also the military and business sectors, educational institutions, the healthcare system, and marriage (Olimova, 2004). Regional identities and networks play an important role in an individual's life, from school or university, through the selection of a spouse, and into the workplace. Indeed, according to a 1996 nation-wide poll conducted by the International Foundation for Election Systems (IFES), 68.3% of people living in Tajikistan identified themselves as belonging to a clan (Qtd in Olimova, 2004, 92). However, as reported by many of Olimova's focus group participants, regionalism is perceived to be damaging to Tajik society as a whole.

The military and business sectors, as well as the judicial branch, remain closely aligned with and controlled by the ruling Kulobi government currently in power in Dushanbe.

The governing group of clans [from Kulob] holds the central power in its hands, meaning the governmental ministries and agencies. An integral part of their governance is the control and regulation of customs and tax systems and correspondingly the control of the business sector. However, the key instruments of governance are the legal and military forces... Obviously, the commanders of military units are closely related to the central government... represent[ing] the same ethno-regional group (Olimova, 2004, 89).

Indeed, many of these commanders have remained in power since the Civil War by maintaining regional brigades, and accepting financial support from regional elites and businessmen (Ibid, 95).

Ordinary citizens find that their lives are also impacted by regionalism. Parents, for example, seek out teachers for their children from their own region, and professors show favoritism to students from the same region. One young Tajik woman commented that “Always there is a chance to pass an exam for nothing... [Professors] will assess your origin, but not your knowledge” (Qtd in *ibid*, 97). Healthcare is reportedly better and cheaper when administered by a doctor from the patient’s region (*Ibid*, 98). However, given the corrupt education system, it is doubtful whether or not younger doctors possess adequate knowledge and skill to provide medical services. Just as parents are increasingly seeking out regional teachers for their children, they also choose regional spouses. These traditional marriage practices were gradually disappearing under the Soviet Union, but are now experiencing a revival. Finally, securing employment is also linked to an individual’s place of origin. Employers reportedly ask about a candidate’s origin before asking about their level of education or ability. In fact, good employees have been fired based on their regional origin (*Ibid*, 97).¹¹ The pressures of Tajikistan’s youth bulge, discussed in Chapter 3, only increase competition for entrance into the university and later employment.

The larger historical picture indicates that the importance of regional identities wane and wax. At present, regionalism is an important reality of life for the Tajik population: “The collapse of [Soviet] systems of social service, education, healthcare and social protection

¹¹ One young woman from Hissor reported that “I was an accountant in an organization for a year and there were no problems at all. [A month after] we got our new director from Kulob, he started personnel clearance. I was called into his office. ‘Where are you from?’ he asked. ‘From Hissor,’ I replied. ‘Why couldn’t you find a job in Hissor? Go and work there,’ he finished. I was forced to resign” (Qtd in Olimova, 2004, 97).

has made people reliant mainly on family, relatives and their ethno-regional groups” (Ibid, 98). While regional identities, in and of themselves, do not lead directly to violence, the regional power structures erected during the Tajik Civil War are deeply entrenched and do contribute to structural violence and conflict. In general, poverty and lack of social services, especially when inequitable, increases the importance of regional identities, the prevalence of clans, and the potential for social manipulation, fracture, and conflict. Therefore, while recognizing the serious consequences of regionalism at present, it is essential to examine the underlying causes of poverty as well.

2.5 Poverty

The incidence and influence of militant Islam, ethnic clashes, and regionalism are all heightened by the existence of poverty. While these factors should be recognized as escalating the likelihood of conflict, they should not be cited as the sole, underlying causes of conflict. In order to uncover the factors that lead to the formation of groups that espouse violence, we must ask: Why is militant Islam attractive to some young men and women? And what factors cause ethnic and regional tensions to escalate into violence?

Some analysts recognize that poverty contributes to a context in which young men are more readily recruited into militant groups (Hunter, 2001; Rubin, 2005; and Weir, 2005). Militant groups promise an Islamic state with attendant social and economic benefits, in addition to training their recruits and paying them in US dollars for their loyalty. In essence, they offer young men a more lucrative livelihood strategy than farming or

pasturing on degraded and marginalized lands. Furthermore, if states fail to provide the necessary social services to their populations, the ensuing poverty can result in heightened identification of individuals with their religion, ethnicity, or region, whichever is able to provide some form of social support network.

Indeed, poverty, coupled with population growth and youth bulges, partly describes the vulnerability context in which young people see no future for themselves. Given limited livelihood options, young men are more likely to join the ranks of militant groups, while women, along with their children and elders, are driven to increasingly desperate and unsustainable livelihood strategies. As we have seen above, land, water, and energy disputes – all concerning natural capital – can precipitate ethnic and regional stereotyping, tensions, and conflict. Poverty, or lack of access to sufficient and secure livelihood assets, is the common denominator for such conflicts. Unfortunately, few Central Asian security experts examine the underlying causes of poverty.

2.5.1 Causes of Poverty

Identifying poverty as a significant contributing factor to conflict moves the discourse one step closer to identifying the deeper causes of conflict. Interventions based on this level of analysis have greater long-term potential for success than anti-terrorism military campaigns, and include poverty reduction plans, programs, and projects. Yet, an essential question remains: Why are people living in poverty?

Central Asian experts offer legitimate explanations for poverty, though they often stop short of identifying and exploring the links between natural capital loss and poverty. Analysts rightly point to repressive state economic policies and attendant lack of access to international markets (Rubin, 2005 and Weir, 2005), as well as to the financial support for authoritarian and repressive regimes from geopolitical powers interested in oil, gold, cotton, strategic military bases, and/or the fight on terrorism as causes of poverty (Rashid, 2001). Other analysts point to so-called “poverty traps” which prevent individuals and families from extricating themselves from impoverishment (Smith, 2005). Such analyses emphasize high fertility rates, child labor, illiteracy, lack of information and skills, malnutrition and disease, and debt bondage, all of which are analyzed in Chapter 3. In his book *Ending Global Poverty: A Guide to What Works*, Stephen Smith also explores lack of specialization in agriculture, farm erosion, and common property mismanagement as poverty traps (2005), all of which are closely related to natural capital. More such analysis needs to be conducted, elucidating loss of natural capital and attendant unsustainable livelihoods as pervasive and significant underlying factors of poverty.

2.5.2 Natural Capital Loss and

Unsustainable Livelihood Strategies

Though limited in number, the high quality efforts to study the environmental causes of insecurity and conflict in Central Asia have concluded that scarcity of renewable resources plays a significant role (Carius et al, 2003 and ENVSEC, 2005). The recent work by the Environment and Security Initiative (ENVSEC), a joint Organization for Security and Cooperation in Europe (OSCE), UN Environment Program (UNEP), UNDP,

and North Atlantic Treaty Organization (NATO) project, focused on the Ferghana Valley in Kyrgyzstan, Tajikistan, and Uzbekistan (2005). The report concluded that

in only a few cases is the scarcity of renewable resources a factor in *interstate conflicts*. But by limiting the productivity of agriculture and the economy as a whole, encouraging migration and social segmentation, and sapping the power of the state, such scarcity can contribute to diffuse, persistent, *sub-national civil violence* (Ibid, 38, author's italics).

While states rarely go to war over renewable resources, social and civil conflict does become more likely. This conclusion is reflected in the occurrence of intra-state conflicts in Central Asia, which have often included scarcity of renewable resources as one of their important causal factors.

The ENVSEC report and the UNDP report *Addressing Environmental Risks in Central Asia* (Carius et al, 2003) are in keeping with the concept of *environmental scarcity* developed by Thomas Homer-Dixon and the Toronto Group. *Environmental scarcity*, focused on renewable resources, can result from three different phenomena: 1) a lack of supply of the resource due to environmental depletion or degradation, 2) an excess of demand for the resource due to population growth or migration, and 3) an inequitable distribution of the resource (Homer-Dixon, 1999).¹² For the purposes of this paper,

¹² The environmental scarcity concept has not been without its critics. Nils Petter Gleditsch, for example, criticized the concept on four counts, none of which are appropriate to the isolated and impoverished context of rural Tajikistan (1998). First, he says that "human inventiveness and technological change" will serve to increase crop yields and the rate of extraction of ores. This may be all good and well, but the rural Tajik population does not have access to, much less the ability to afford, such innovations. Secondly, he asserts that international trade will allow for the import of otherwise local scarcities. Again, most rural Tajiks have neither the access nor the means to enjoy the benefits of international trade. Thirdly, Gleditsch points out that one resource can be substituted for another. This may work in theory, but the author does not offer any suggestions for the substitution of the renewable resources so vital for rural livelihoods, such as cropland, pastures, and water. Finally, he states that as a resource becomes scarce its price will increase, leading to the furthering of the above processes of innovation. What he fails to note is that some populations are in such a vulnerable state that they lack the assets, time, or capacity to innovate or benefit from innovation. For additional responses to Gleditsch's criticisms, see Schwartz et al, 2001.

environmental scarcity can roughly be equated with *loss of natural capital*, a concept from the sustainable livelihoods discourse (DFID, 1999).

The processes that bring about *environmental scarcity* or *loss of natural capital* are central to the research and strategy questions posed in Chapter 1. The research question focuses on “decreases in natural capital among rural households.” These processes are analyzed in Chapter 3 through the Sustainable Livelihoods Framework (DFID, 1999), with due consideration given to Homer-Dixon’s supply-, demand-, and distribution-induced environmental scarcity (1999). In Chapter 4, the strategy question also recognizes these processes. It addresses the problem of supply by seeking to ensure the protection of natural capital; the problem of demand by seeking to promote sustainable management; and the problem of distribution by emphasizing the need for equitable access and control.

The importance of natural capital to rural livelihoods and conflict or peace is emphasized in both the research and strategy questions. In his study of conflicts of the 1990s, Leif Ohlsson demonstrated the links between environmental scarcity, loss of livelihoods, and conflict (2000). In similar fashion, this paper’s research question illuminates the links between natural capital loss, unsustainable livelihood strategies, a worsening vulnerability context, and conflict, both social and violent, in Tajikistan. Given the discrepancies between the livelihood options open to rural women and men, this paper also incorporates a gender perspective throughout. The strategy question proposes that

increased capacity for environmental governance could mitigate conflict by supporting rural livelihoods and promoting peace.

In summary, we have seen that the literature on conflict in Central Asia tends to place too much emphasis on militant Islam and ethnic violence. While these phenomena contribute to the frequency and intensity of conflict in Central Asia, they exist within a larger context, and are dependent upon other factors for their existence. As discussed, some of these factors include Central Asia's physical and political landscape; the drug trade in Afghan opium; borders inherited from the Soviet Union; and attendant disputes over the allocation of natural and cultural resources. Regional power structures are of special concern, especially in Tajikistan, and have become a cause of violence in their own right. While some analysts point out that poverty is an important problem in Central Asia, few recognize the extent to which it contributes to the formation of militant Islamic groups and the occurrence of ethnic and regional clashes. By not recognizing the links between poverty and conflict, few analysts examine the causes of the former. In particular, the crucial link between natural capital loss and unsustainable livelihoods, especially within predominantly rural, agrarian contexts such as Tajikistan, is inadequately researched as an underlying cause of poverty, human insecurity, and conflict. The following analysis seeks to address this gap in the literature.

Chapter 3 Sustainable Livelihoods Analysis of the Tajik Context

This chapter seeks to answer the research question posed in Chapter 1: Have decreases in natural capital among rural households had negative impacts on livelihoods and precipitated social and violent conflict in post-Civil War Tajikistan? In order to accomplish this task, a sustainable livelihoods analysis of the Tajik context in the wake of independence and the Civil War is conducted. After a short discussion of this framework (3.1), this chapter is divided into sections that (3.2) describe key aspects of the rural vulnerability context; (3.3) introduce rural livelihoods, natural capital loss, and compromised livelihood options; (3.4) analyze environmental governance structures and processes; and (3.5) discuss livelihood strategies and outcomes. In the final section, (3.6), the need for capacity strengthening for environmental governance is emphasized.

3.1 Sustainable Livelihoods Framework

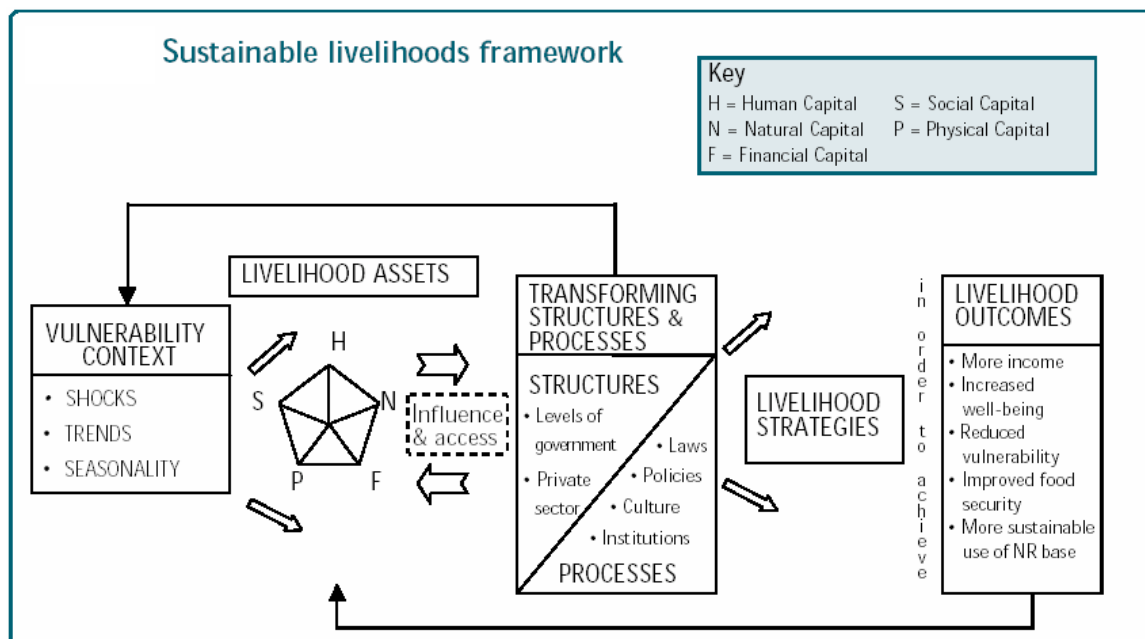


Fig. 3.a, Sustainable Livelihoods Framework (DFID, 1999, 2.1)

The Sustainable Livelihoods Framework is permeated by the concept of *livelihood*, which is comprised of “...people, their capabilities and their means of living, including food, income, and assets. Tangible assets are resources and stores, and intangible assets are claims and access” (Chambers and Conway, 1991). Access to sufficient livelihood assets is essential to ensure the viability and sustainability of rural livelihoods.

A combination of livelihood assets forms the foundation for sustainable livelihoods, though natural capital is of special importance in rural developing contexts. *Livelihood assets* include human, social, physical, financial, and natural capital. The latter, given challenges of substitution, is of special importance. While livestock is easily converted into physical, financial, or even social capital in times of need, other key forms of natural capital, especially land and water, are non-substitutable if pastoral and farming livelihoods are expected to thrive (Neefjes, 2000, 89). That said, it is neither possible, nor desirable, to analyze one livelihood asset in isolation. Indeed, natural capital is worthless unless it is accompanied by the access, control, and sustainable management afforded by the other assets and environmental governance. Human health and education, social networks, physical infrastructure, and financial resources are all essential and discussed throughout.

The quality of natural capital and households’ access to various forms of it are greatly influenced by environmental governance structures and processes. *Natural capital* is

defined as “...the natural resource stocks from which resource flows and services useful for livelihoods are derived” (DFID, 1999, 2.3.3). As noted above, key examples of natural capital for rural livelihoods include access to and control of healthy livestock, fertile cropland and pasture, and clean water. Natural capital is essential in impoverished rural communities that depend primarily on subsistence livelihoods. In this regard, environmental governance, or *transforming structures and processes*, is of central importance. Decisions concerning the protection and sustainable management of natural capital, as well as rural households’ access to and control of this essential asset, are made through governance structures and processes, including the policies and institutions that are generated and maintained by various levels of government, business, and civil society.

By examining the *livelihood strategies* that are available to and chosen by rural populations in Tajikistan, it quickly becomes clear that they are, for the most part, unsustainable and result in unsatisfactory *livelihood outcomes*. Livelihood options are compromised by ineffectual environmental governance, which, in turn, compromise livelihood assets and threaten the overall *vulnerability context* within which rural households seek to sustain themselves. Women disproportionately bear the burden of unsustainable strategies and lack the already insufficient access to resources claimed by most men, rendering them a particularly vulnerable and disadvantaged population.

The need to identify and address the obstacles to effective environmental governance becomes exceedingly clear when it is recognized that unsustainable rural livelihoods can

precipitate conflict. Environmental governance can reform the structures and processes that threaten natural capital, and ameliorate the vulnerability context such that conflict – both social and violent – is less likely to occur.

3.2 Rural Vulnerability Context

DFID’s definition of the vulnerability context places an emphasis on the “external environment,” or externalities, that are largely beyond the control of any given household in a rural context.

The Vulnerability Context frames the external environment in which people exist. People’s livelihoods and the wider availability of assets are fundamentally affected by critical trends as well as by shocks and seasonality – over which they have limited or no control (DFID, 1999, 2.2).

The current vulnerability context in Tajikistan is such that it compromises the livelihood options available to rural households. By analyzing it here, we can better situate households within the realities of their rural context. Externalities in Tajikistan include shocks such as independence from the Soviet Union, the Civil War, droughts, and earthquakes; trends such as population growth, a declining education system, widening gender inequities, increasing prevalence of disease, and grinding poverty; and seasonal cycles such as spring floods and winter deforestation. These shocks, trends, and seasonal cycles work in combination to threaten, among other things, rural livelihood assets and options. An in-depth discussion of rural livelihoods and processes of natural capital loss is, however, reserved for the following section, (3.3).

Tajikistan is a poor, predominantly rural and agricultural country, highly dependent on natural capital. It was the poorest Soviet republic and remains the poorest country in the

former Soviet Union to this day. Tajikistan covers approximately 143,100 km² and faces the challenge of having only 7% arable land, with the remainder of its territory predominantly made up of steep and high altitude mountainous terrain (WB, 2005). The country has an arid climate that is susceptible to droughts, with hot summers, especially in lower elevation areas, and cold winters, especially at higher elevations. The ethnic composition of the population is approximately 65% Tajik, 25% Uzbek, 3.5% Russian, and 6.5% other (UNRC, 2006). Ethnically Kyrgyz pastoralists live in the upper mountain valleys of RRS as well as the eastern Pamirs of GBAO.

3.2.1 Shocks

According to the sustainable livelihoods literature, shocks are difficult to predict and can destroy assets directly or force households to move, thus abandoning land and other vital assets (DFID, 1999, 2.2). War, droughts, and earthquakes have precipitated both of these phenomena in Tajikistan, and forced rural households to cope as best they can. Though this paper focuses on the post-Civil War period, an analysis of the current rural vulnerability context would be incomplete if it omitted the historical roles played by an abrupt independence from the Soviet Union and the subsequent Civil War itself.

Furthermore, droughts and earthquakes are shocks that threaten rural households and are likely to continue doing so. These shocks, both anthropogenic and natural, are briefly discussed here in chronological order.

The one-time shock of independence from the Soviet Union in 1991 was followed by an economic crisis and loss of social services. Leading up to independence, Tajikistan was

the poorest and most highly subsidized republic within the Soviet Union. It had the lowest GDP per capita and received an enormous 47% of its total government revenues directly from Moscow (UN Economic Commission for Europe (UNECE), 2004, 4). Not only did these subsidies abruptly stop flowing, but Tajikistan's trade, heavily dependent on former Soviet republics, crumbled. Lack of state financial resources was compounded by a "brain drain" of intellectuals and managers, particularly Russians. Social services, including the health and education systems, and physical infrastructure, including transportation and irrigation systems, began to deteriorate. Lack of state social services heightened individuals' dependence on regional and clan networks which, as discussed in Chapter 2, were a significant factor leading up to the Civil War, and became deeply entrenched as a result.

The Civil War, which officially lasted from 1992 to 1997 in spite of sporadic fighting well into 1998, further devastated the Tajik economy and society. Of a population of just over 5.5 million people at the beginning of the war (UNECE, 2004, 6), the workforce was depleted by the deaths of an estimated 50,000 to 100,000 people; hundreds of thousands of internally displaced persons (IDPs); and close to 600,000 emigrants, primarily to Russia and secondarily to Afghanistan (Ibid, 3). The Civil War further exacerbated economic and social disintegration. Even in 2003, after seven years of gradual improvement from its low in 1996, Tajikistan's GDP per capita had not even reached half of its already impoverished 1990 level (Ibid, 6).

The agricultural sector, upon which the Tajik economy is still highly dependent, also crumbled. It lost state extension and input services; saw seven research institutions close their doors or work with minimal staff; and suffered from the destruction of tractors and other farm machinery (Morgounov and Zuidema, 2001). Though Tajikistan supplies approximately 50% of the Aral Sea basin's water, it suffers from very poor management of water resources (UNECE, 2004, 5). Irrigation for agriculture consumes 87% of water withdrawn in Tajikistan and, two years into the Civil War, water losses between the source and the field were at a staggering 72% (UN Food and Agriculture Organization (FAO), 1994). Such water seepage is still causing salinization and desertification of once arable cropland, processes that are further discussed below.

While the 1997 Peace Accords helped to bring an end to widespread violent conflict in Tajikistan, hopes for improved governance and, by extension, an improved vulnerability context, have been left unfulfilled. The Peace Accords legalized the opposition parties, including Central Asia's first Islamic party, and guaranteed these parties 30% of high-level government posts. While it is hoped by many that such changes will act to mitigate the reemergence of civil war in Tajikistan, it remains to be seen what role the multiparty system and the proximity of the Civil War will play. Unfortunately, the Rakhmanov regime, which has been in power for the last 12 years, is becoming less and less democratic. In the February 2005 Parliamentary elections, the landslide victory for the President's party has been widely criticized both within Tajikistan and internationally. The observer mission leader of the OSCE, Peter Eicher, called the election process a "disappointment," citing "widespread irregularities" (Qtd in EurasiaNet, 2005c). The

opposition parties rightly declared that such practices were in violation of the 1997 Peace Accords. Not since the end of the Civil War have they been as vocal as now, but most recognize the precariousness of the situation and are reluctant to instigate violence (EurasiaNet, 2005b). However, it was reported in May that Rakhmanov is continuing to remove political rivals in an effort to ensure his re-election this fall (Simon, 2006). If conflict does break out, it is important to note that “The opposition... [is] a motley collection of parties, mixing democratic, Islamist and regional aspirations” (ICG, 2004). As such, renewed violent conflict could be very ugly and protracted. Further governance concerns, in particular environmental governance, are discussed in detail in section 3.4.

Drought has directly caused loss of natural capital and resulted in prolonged food insecurity. In 1999, just two short years after the signing of the Peace Accords, Tajikistan was beset by three years of devastating drought. Crops failed, yields plummeted, and arable land was lost. Exacerbated by the highest fertility rate and population growth in the former Soviet Union, droughts contributed to serious food and livelihood insecurity that still persist today. According to the State Hydro-Meteorological Agency of Tajikistan, various regions within the country received 80% of regular precipitation in 1999, 40-65% in 2000, and only 40-60% in 2001 (UNDP, 2005, 43). The drought required that food aid be provided to rural communities (FAO, 2000). Large populations still depend on this food aid today, a phenomenon that is further discussed in section 3.5 concerning livelihood strategies.

Given global trends of climate change, including loss of precipitation and higher temperatures in some regions, the shock of drought is likely to recur in Tajikistan. A recent survey of long term glacier and climate variability in mountain regions of the former Soviet Union indicates a general warming trend, with glacial sizes diminishing throughout the area (Solomina, 2005, 70). Indeed, temperature increases and changes in precipitation have been measured in the Pamir Mountains of GBAO and threaten the vast water reserves stored in the oblast's 8,492 glaciers (Breu and Hurni, 2003, 9). Between 1961 and 1990, the temperature increased by 5 degrees Celsius and the Fedshenko Glacier, at 70km one of the region's largest, lost 1km of its length (Ibid). Drought and water insecurity, precipitated by climate change, threaten natural capital and the viability of rural livelihoods.

Another recurring shock within the rural vulnerability context is the occurrence of earthquakes. The severity of the impact is a combination of the earthquake's intensity; the depth and location of the hypocenter; and the capacity of human structures to withstand the tremors. As recently as the 29th of July 2006, for example, four earthquakes with magnitudes ranging from 4.6 to 5.6 on the Richter scale struck in Khatlon oblast, near the Afghan border (United States Geological Survey (USGS), 2006b). Three of the four earthquakes were considered "shallow," or at depths of less than 70 km (USGS, 2006a). The final two earthquakes that day had hypocenters at only 10 km below the ground (USGS, 2006b) and caused serious damage on the surface to seven villages (UNOCHA, 2006). Indeed, homes in rural Tajikistan are traditionally built of mud-brick. As such, they are especially vulnerable to collapse, even as the result

of relatively weak earthquakes. Such natural disasters create large numbers of homeless and displaced persons, but, fortunately, homes are usually one and no more than two stories tall, minimizing the number of fatalities. In the July earthquakes, the deaths of three children have been confirmed, in addition to the widespread destruction of homes and infrastructure. The total destruction of 721 homes and the partial destruction of 1,205 have impacted approximately 15,408 people (Ibid). Furthermore, it is reported that 5 schools and a college, 4 health centers and a hospital, an elderly home, 4 shops, 20 administrative buildings, 4 transformers, 2 km of electric wire, and a water pumping station were damaged (Ibid). As with the dozens of earth tremors and quakes that hit Tajikistan each year, there are serious concerns about drinking water, sanitary conditions, and the outbreak of infectious diseases. The financial damage is estimated at \$22 million by Tajikistan's National Emergency Commission (Ibid).

All of the above shocks, both historical and recurring, form part of the vulnerability context within which rural households must struggle to sustain themselves. Whether directly or indirectly, they threaten rural livelihood assets, including natural capital. Some of these shocks have set trends in motion or altered their trajectories. Some of the most salient trends are discussed next.

3.2.2 Trends

Trends, though more predictable than shocks, are not necessarily less damaging to livelihood assets and rural households (DFID, 1999, 2.2). Trends can include changes in demographics, resources, economics, and health. While Tajikistan continues to struggle

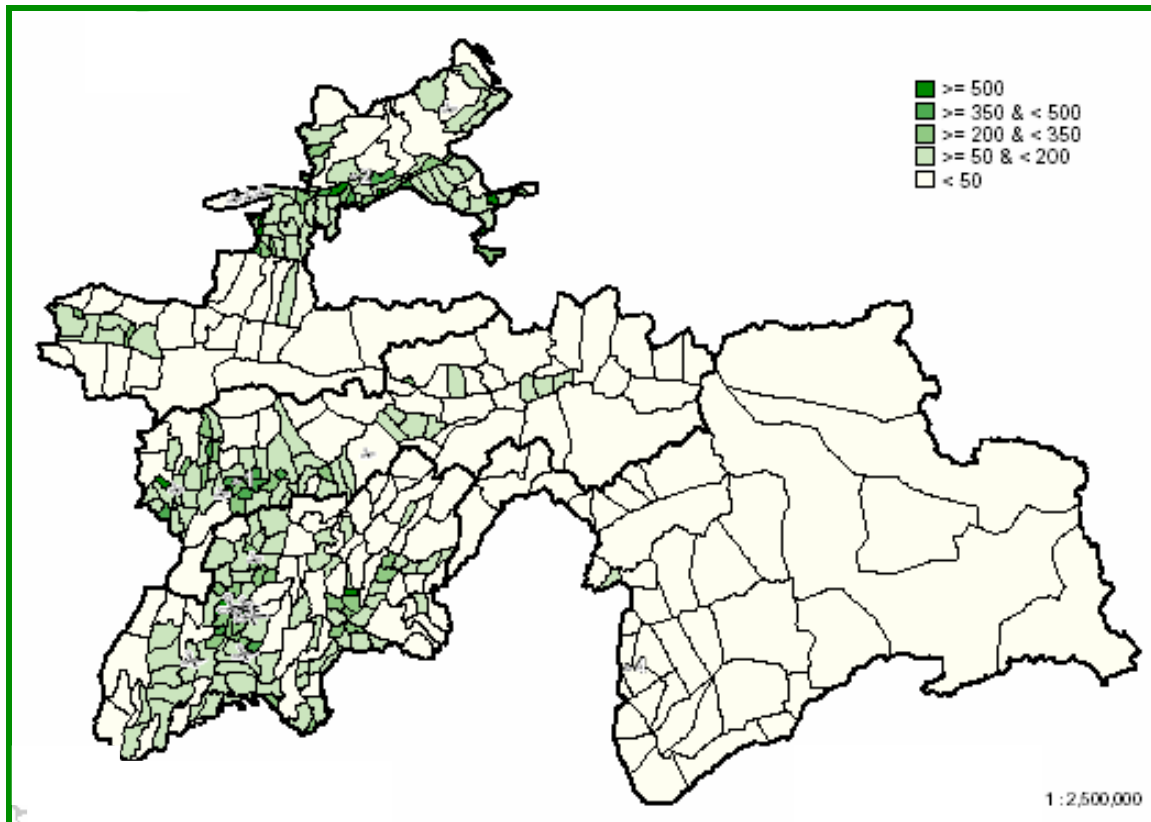
with its transition from a centralized, command-based Soviet economy to a free market economy, it still has a long road ahead. This sub-section highlights key demographic and poverty trends that, if not addressed, will continue to have serious ramifications for rural livelihoods and stability. Fertility rates, population growth and density, education, and gender are explored, as well as health indicators.

Demographic change in Tajikistan starts with the country having the highest fertility rate in the former Soviet Union. Even after steady declines since 1990, Tajikistan's fertility rate, according to the World Health Organization's (WHO) *Health for All* database, was still at 3.1% in 2001 (WHO, 2006a). In spite of deaths during the Civil War and considerable out migration, the population has grown steadily from 5,303,000 in 1990 (UNECE, 2004, 6) to 6,672,000 in 2003 (UNDP, 2003), more than 20% growth in 13 years.

One significant characteristic of this population growth has been a large youth bulge. The population under 15 years of age has remained at a steady 40 to 45% of the total from 1990 to 2002 (WHO qtd in UNECE, 2004, 3) and, in 2003, those 18 and under made up approximately half of Tajikistan's total inhabitants (Government National Plan of Action, 2003-2010, qtd in Oxfam, 2006a). Coupled with overall population growth, this means that the youth population is burgeoning and poses important challenges to the state's healthcare and education systems, as well as to employment. Unlike the Soviet system, healthcare, schooling, and work are no longer guaranteed for all.

Some young adults are resorting to migration that, as in many parts of the world, is a complex phenomenon in Tajikistan. Internal migration is discussed here, while shuttle, seasonal, and permanent migration to other countries are discussed as livelihood strategies in section 3.5. Internal migration has been conducted by those returning to their regions of origin, whether from displacement during the Civil War or from earlier displacement during the 1950s to work in the cotton growing regions of Khatlon or Sugd oblasts (International Organization for Migration (IOM) in UNECE, 2004, 15).

Significantly, very little rural to urban migration has taken place, due to lack of opportunities in cities. In fact, urbanites with no viable livelihood options are leaving cities to attempt subsistence farming in rural areas (IOM in *ibid*). As a result, “Tajikistan’s rural settlements are facing the highest demographic increase among the countries of the CIS [Commonwealth of Independent States]” (*Ibid*). Tajikistan’s overwhelmingly rural population, at 70% (UNRC, 2006), is clustered in Khatlon and Sugd oblasts, as well as parts of RRS, as shown below in Map 3.a (WB et al, 2005). These areas correspond with cotton growing regions and, to a large extent, poverty, explained in detail below. Increasing population density does not bode well for the country’s already scarce land and water resources, discussed in the following section on rural livelihoods (3.3).



Map 3.a. Rural Population Density in Tajikistan (WB et al, 2005)¹³

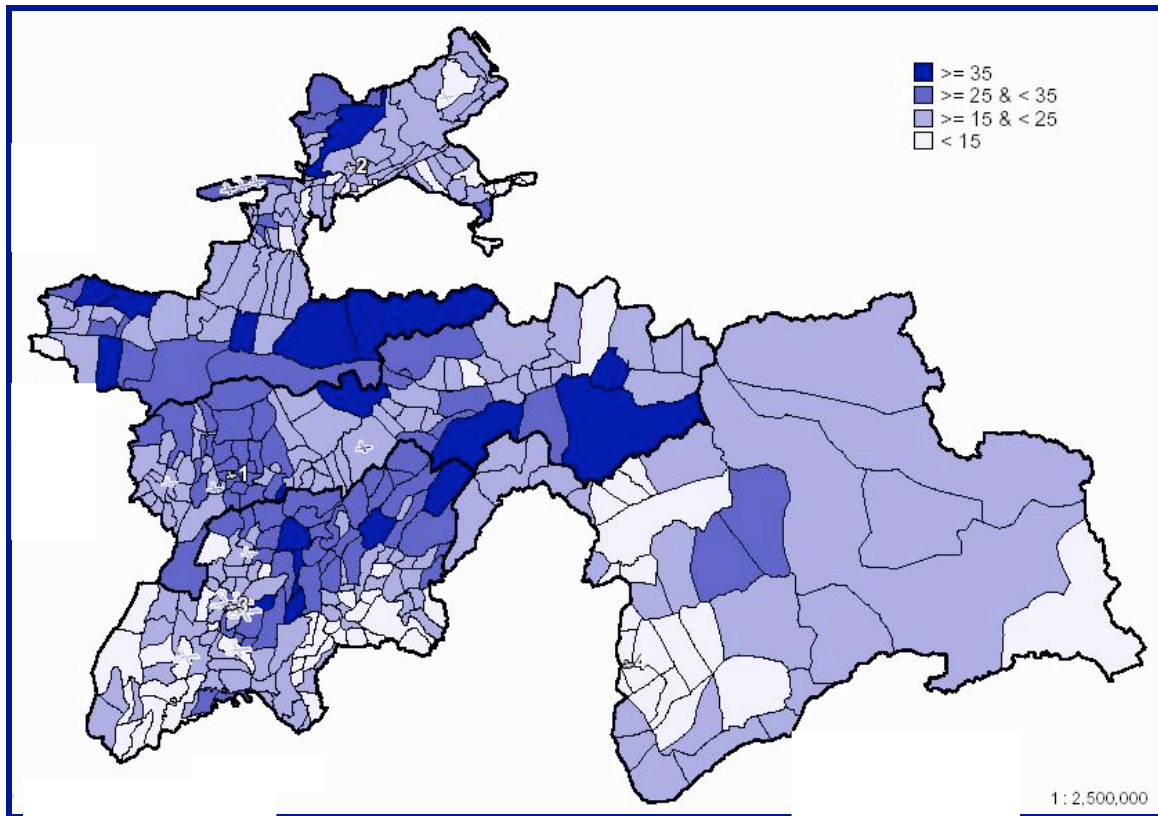
Livelihood assets, especially human and social capital, are developed in large part through education. In this regard, it is alarming that the percentage of children attending school is dropping (WB, 2005). “Despite somewhat increased public financing of education [between 1999 and 2003], most schools are in a very bad state after years of decline, teaching needs to be improved, and the curriculum updated” (WB, 2005, x).

Jane Falkingham of the Department for Social Policy at the London School of Economics wrote in a report published by the Asian Development Bank (ADB) that 94% of 7 to 15

¹³ This map, as well as others below, is from the *Socio-Economic Atlas of Tajikistan*, the first of its kind in Central Asia. It was developed by the University of Southampton, United Kingdom and Tajikistan’s State Statistical Committee, and funded by DFID and the World Bank (WB et al, 2005). Data in the atlas is based on the 2000 Tajik Census and Tajikistan’s Living Standards Survey of 2003 (UNDP, 2003).

year olds were enrolled in compulsory education in 1990, compared to 89% in 1998 (2000, 65). This number has continued to drop and, combined with the population growth described above, indicates that an absolutely larger group of school-age children are not benefiting from education.

In 2003 many young adults had only completed primary school or had completed no education at all, as shown below. Districts in which at least 25% of adults have only primary education or no education at all stretch from mountainous areas in Sugd and RRS to cotton producing areas in Khatlon and around the capital. Even the measurements indicating higher educational achievement leave up to 15% of the population under-educated and ill-prepared for livelihoods beyond subsistence farming. Indeed, as discussed in section 3.5, one of the reasons that children are absent from school is that they are compelled to harvest cotton each year (Oxfam, 2006a). “Refusal to participate can result in public rebuke [and] difficulties in passing exams... leading to a loss of interest and progress in school” (Ibid, 2).



Map 3.b. Percentage of Rural Population 17 Years of Age and Older with Only Primary or No Education (WB et al, 2005)

While overall percentages of children attending school have dropped, girls have suffered the most. The gender gap in education is widening, robbing young women of the opportunity to develop their intellectual potential, and thus limiting their livelihood options. Girls are overwhelmingly kept at home to do chores and care for elderly relatives. Upon marrying, they generally move into their husband's parents' home to continue doing much of the same, in addition to rearing children. The following graph represents the situation 8 years ago; it has continued to worsen ever since (Falkingham and ADB, 2000).

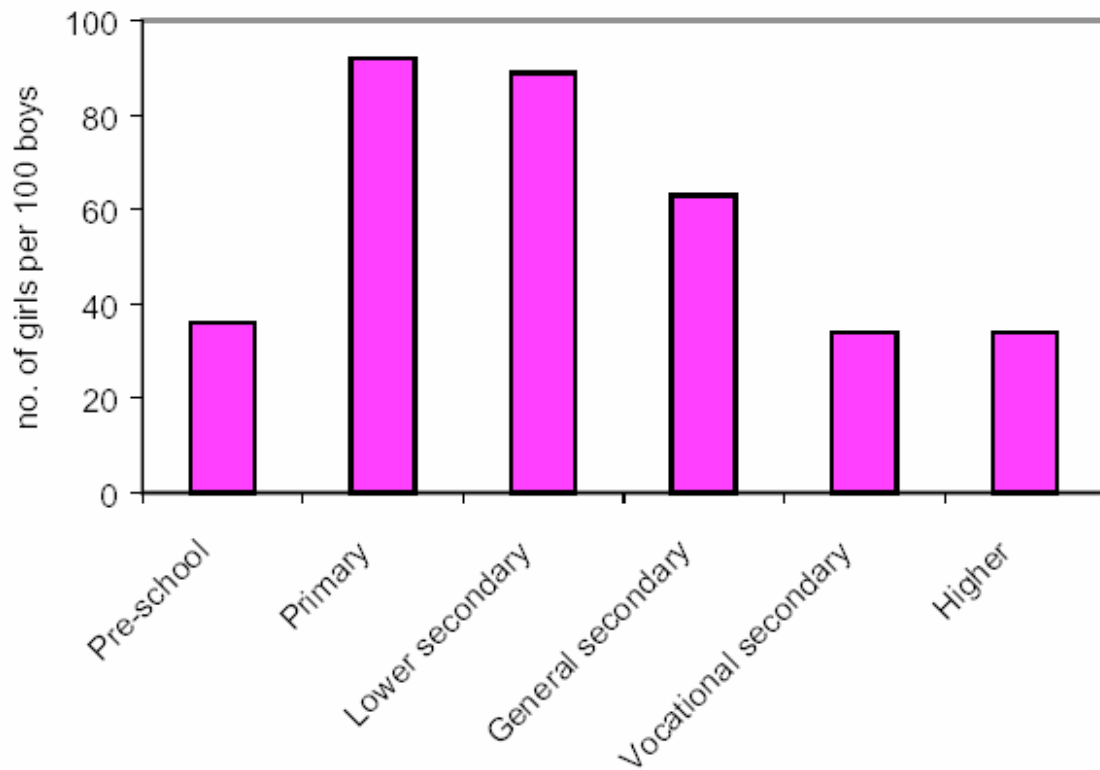


Fig. 3.b, The Gender Gap in Education, 1998 (Falkingham and ADB, 2000, 65)

A lack of education has created an obstacle for women seeking to enter and engage in the public sphere. For example, gender equality in government during the Soviet period was, at least in theory, balanced through a quota system at all levels. More women were participating and visible in public life, though a small number of men still held the key decision-making positions (Falkingham and ADB, 2000, 25). Though the situation was far from perfect for women under the Soviet Union, it has since deteriorated further. In recent Parliamentary elections, for example, 5 of the 181 deputies elected, or under 3%, were women (WB, 2005 qtd in *ibid*). The story behind these highly inequitable numbers is that only 17 women, as compared to 348 men, were in a position to offer their candidature for office. Over half of the men who ran for office succeeded, compared to

only 29% of the women. This seems to demonstrate a general public lack of confidence in female political leaders. The percentages of women in politics at the oblast level, 4%; district level, 7%; and municipal level, 11%; are not much better than in Parliament. Many intelligent and capable women are not afforded the opportunity to serve their country due, in part, to gender inequities in the education system and the espousal of traditional gender roles by society. The situation is only growing worse. Indeed, where as the majority of higher education students, 58%, were women in 1990, only 34% were women in 1998 (Falkingham and ADB, 2000, 65).

There is a gender gap in the workplace as well. Only 25% of business managers are women, while nearly half of all workers are women (Falkingham and ADB, 2000, 26). Furthermore, childcare facilities were subsidized by the state during Soviet times, allowing women to better balance reproductive and productive roles. These facilities have since closed. Significantly, however, a relatively high number of women are heads of non-governmental organizations (NGOs), approximately 35% (Ibid, 26), due, in all probability, to less discriminatory international hiring practices. The sectors in which women are concentrated are in agriculture, education, and health. Notably, these sectors are also the least profitable and do not even provide living wages (Ibid, 40). Approximately 70% of the agricultural workforce is made up of women (UNRC, 2006). Furthermore, women and girls make up as much as 85 to 90% of laborers in cotton growing areas, though they receive inequitable compensation as compared to their male counterparts (Partoev, 2004). This phenomenon is due, in large part, to the gendered

nature of migration out of Tajikistan in which men typically leave women at home to care for the family and engage in subsistence agriculture.



Photo 3.a, Women, Girls, and Boys in Rural Tajikistan (WB et al, 2005)

In family life, rural women bear the greatest share of the unpaid labor and enjoy the smallest share of leisure time (Falkingham and ADB, 2000, 51). Rural women are essentially responsible for all of the laundry, cleaning, cooking, and childcare, while also spending 1 hour, on average, in the homegarden. This work, of course, is in addition to hours of hard agricultural labor for most women. While both rural men and women spend less time at leisure compared to their respective urban counterparts, rural women have the least leisure time of all, less than 3 hours on average each day. These gender roles are made evident in the following figures.

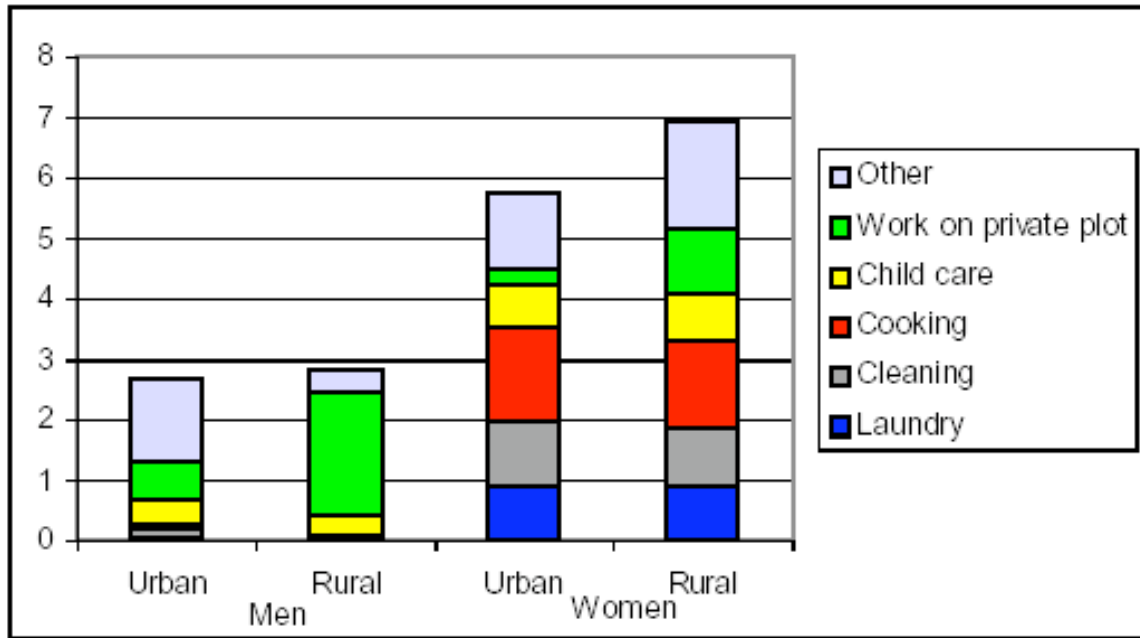


Fig. 3.c, Hours Spent on Unpaid Work in the Home by Men and Women (Tajik State Statistical Committee (SSC), 1999 in Falkingham and ADB, 2000, 51)

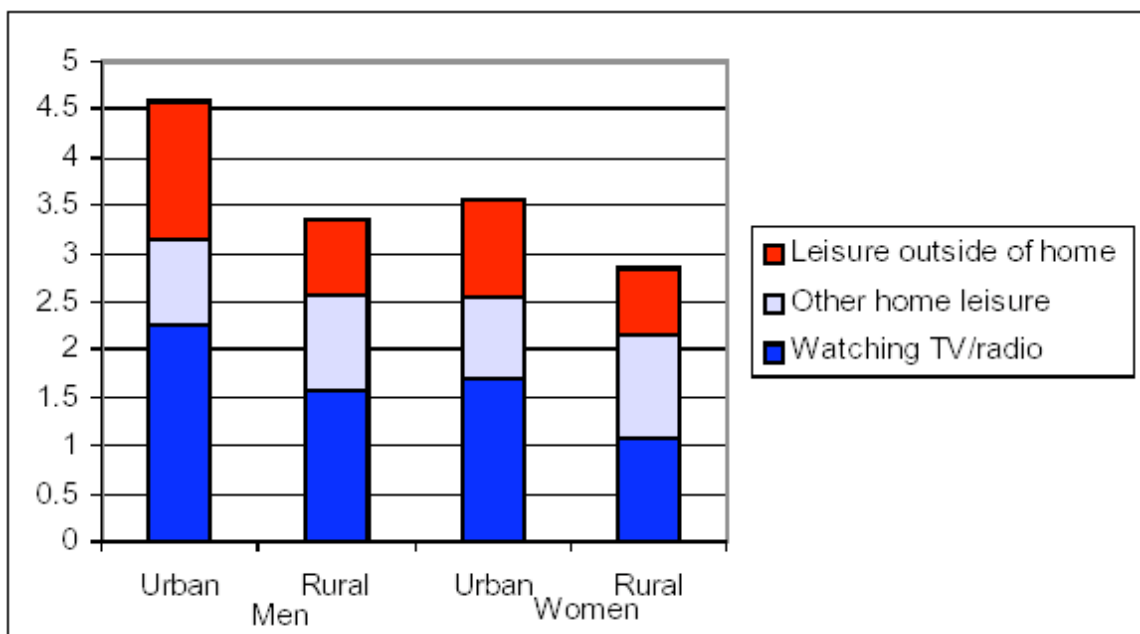


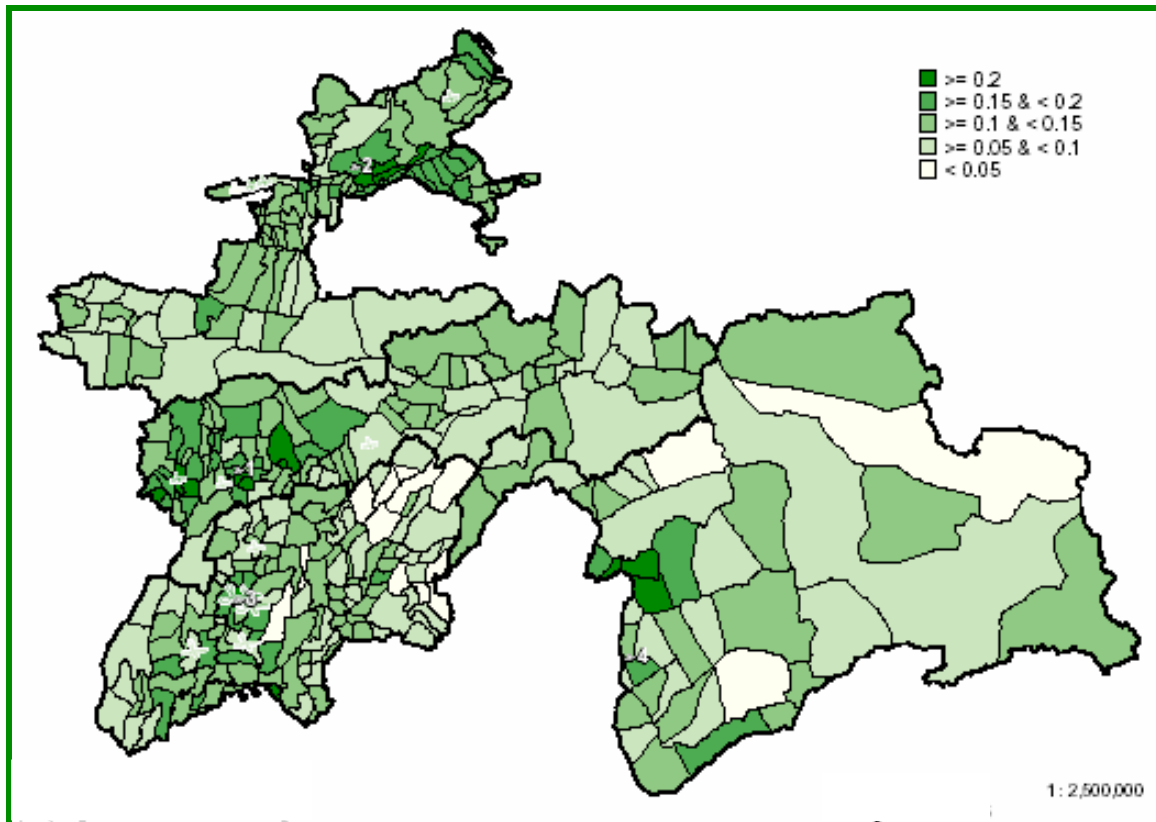
Fig. 3.d, Hours Spent on Leisure by Men and Women (Ibid, 52)

The gender discrepancies in these numbers might be justified if men had significantly lower unemployment rates, but, as indicated below, they do not. In fact, unemployment rates for both sexes are startlingly high and of special concern among 16 through 24 year old men who are susceptible to being recruited into militant groups.

	ILO U1 Definition			ILO U5 Definition (incl. hidden, involuntary, and discouraged workers)		
	Total	Men	Women	Total	Men	Women
16-19	30.8	34.2	26.9	54.2	57.7	50.2
20-24	22.4	23.7	20.8	45.7	48.0	42.8
25-29	16.9	15.6	19.2	42.4	39.7	47.4
30-39	12.2	11.3	13.6	32.2	30.8	34.2
40-49	10.0	9.6	10.6	26.5	23.1	31.1
50-54	6.8	6.2	8.1	19.8	18.1	23.8
55-59	9.4	6.4	20.0	27.0	21.0	47.6

Fig. 3.e, Unemployment Rates by Age Group and Gender (Adapted from De Nuebourg and Namazie, 1999 in Falkingham and ADB, 2000, 44)

A further gender-related demographic trend is the increase in female-headed households. Initially, such households began to appear during the Civil War as a result of male combatant deaths. Following the war, numbers have continued to increase due to out migration of men. Based on Map 3.c, below (WB et al, 2005), a minimum of 5% of female-headed households are present in nearly all of Tajikistan's districts. Households headed by women, as reported in the World Bank's gender profile of Tajikistan, are 30% more likely to be poor than other households (WB, 2000). If poverty rates are so much higher among female-headed households and a significant portion of such households result from out migration of men, this could indicate that male migration and attendant remittances are not worthwhile.



Map 3.c. Proportion of Female-headed Households (WB et al, 2005)

Given the higher population densities in Sugd, RRS, and Khatlon (see Map 3.a, above), compounded with a relatively high proportion of female-headed households in these areas, their absolute numbers are highest in western Tajikistan. This is not surprising because these areas correspond to the country's cotton growing areas, where poverty is highest: "Cotton farmers are poorer than non-cotton farmers despite increased [production] and higher international [cotton] prices [in 2003] as compared to 1999" (WB, 2005, 18).

The above shocks and trends amount to a rural vulnerability context in which poverty is chronic. As we have seen, the large rural population is poorer than the small urban

population. According to a 2002 survey, "...5.1% of the urban population falls into the bottom two 'wealth' quintiles and nearly 60% into the wealthiest category... [where as] in rural areas... 52.9% is in the bottom two groups and only 5.4% in the wealthiest category" (UNECE, 2004, 13). Women, female-headed households, and households in cotton growing areas are most likely to be poor. Furthermore, households with 5 or more children, in addition to elderly persons, are more likely to be poor (Ibid, 14). Percentages vary according to how one defines poverty, so measurements range between 68% of the population living under the poverty line (UNRC, 2006) to 83% in the government's *Poverty Reduction Strategy Paper* (PRSP) (Tajik Government, 2002). The following table disaggregates poverty rates according to oblast. Again, the highest numbers of those living in poverty, 72% of the total population, reside in the cotton growing oblasts of Sugd and Khatlon, while the most severe poverty is found in GBAO (UNDP, 2003 in WB, 2005).

Region	Population	Overall Poverty rate 2003	Share of Poor
GBAO	197,000	84%	4%
Sugd	2,123,000	64%	32%
Khatlon	2,169,000	78%	40%
Dushanbe	630,000	49%	7%
RRS	1,553,000	45%	17%
Total	6,672,000	64%	100%

Fig. 3.f, Poverty Rates and Share of Poor by Oblast, 2003 (UNDP 2003 in WB, 2005)

Indeed, Tajikistan was one of the 20 poorest countries in the world in 2003 (ICG, 2003).

On a macroeconomic level, Tajikistan's GDP plunged after independence and only started to recover incrementally after the Civil War. The GDP per capita in 2004 was \$287 (UNRC, 2006), less than 80 cents per person per day.

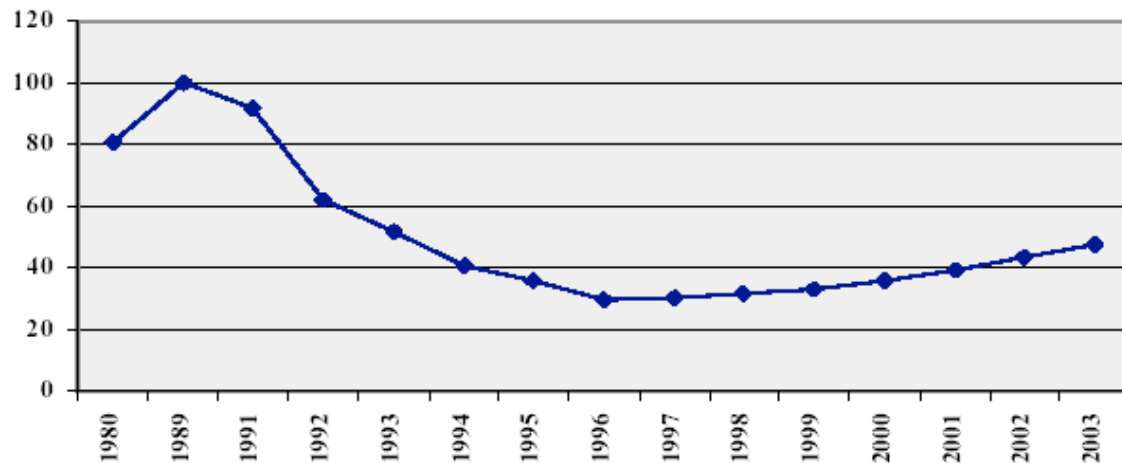


Fig. 3.g, Real GDP Development, 1989 = 100 (UNECE, 2004, 12)

Poverty and poor health in Tajikistan are interrelated. Both waterborne pathogens and airborne particulate are causing a rise in the incidence of disease, especially in the rural, poor population. According to the *Poverty Reduction Monitoring Survey* published by Tajikistan's State Statistical Committee (SSC) and the ADB in 2002, the poorest quintile lack access to piped water in their homes, while depending most heavily on rivers, lakes, or ponds (Qtd in UNECE, 2004, 16), which are likely to be contaminated with pathogens. In fact, less than 10% of the rural population benefits from piped water in the dwelling (WB et al, 2005). The vast majority of the wealthiest quintile, on the other hand, has piped water in their homes, while very few get water directly from rivers, lakes, or ponds.

While piped water in Tajikistan does not guarantee clean water, it is safer to drink. According to the same survey, 82.2% of the rural population depended upon a wood stove or straw and manure for their heating and cooking needs in 1999 (SSC and ADB, 2002 qtd in UNECE, 2004, 17). When burned indoors, the smoke from these traditional fuels can cause respiratory diseases, especially in women and young children who spend the greatest amount of time in the home.¹⁴

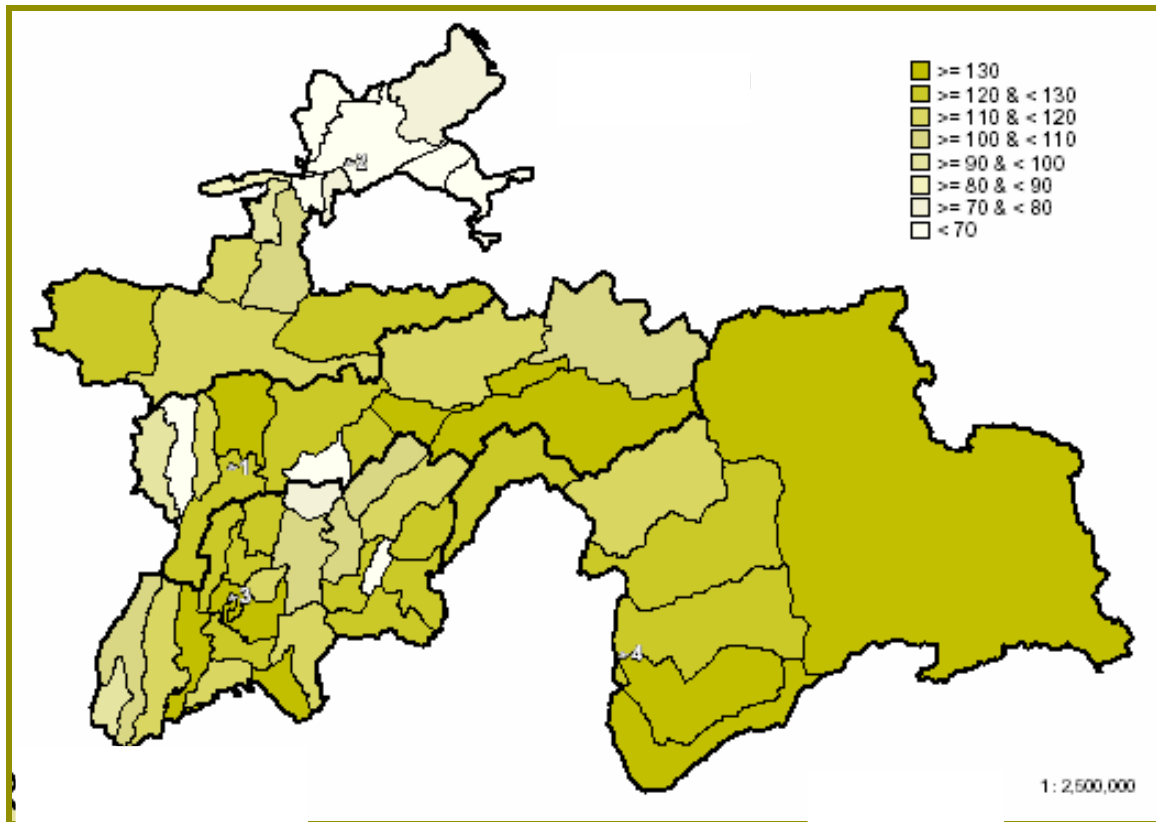
Poverty-related diseases and malnutrition are in a bad state and growing worse, especially in rural Tajikistan. In 2005, the country was ranked at 122 out of 163 countries in terms of human development, a composite measure of health, education, and economic indicators (UNDP, 2005). Poverty related diseases, such as typhoid, brucellosis, anthrax, diarrhea, malaria, and HIV/AIDS, have emerged and are becoming more widespread (WB, 2005, x). The impact of such diseases is made clear by increased child mortality (WB et al, 2005). Malnutrition also drives high rates of mortality for children 5 years of age and younger. In 2003, a Mercy Corps survey found that over 30% of children were chronically malnourished, and mortality rates were on the rise. Such malnutrition is most highly concentrated in cotton growing areas (ICG, 2005b, interview with Gary Burniske, Country Director, Mercy Corps, Dushanbe, September 2004). A nutrition survey conducted by the Ministry of Health and Action Against Hunger (AAH) corroborated these trends, showing that the rates of acute malnutrition in children under the age of 5 had increased from 4.7% in 2003 to 7.6% in 2004 (In Oxfam, 2006a, 2).

¹⁴ In addition to this combined percentage increasing slightly to 83.3% in 2002, the proportion of those opting to use straw and manure increased dramatically (Ibid). This increase, from 36 to 58% in just three years, is indicative of trends in deforestation and attendant lack of wood for stoves. See the next sub-section on seasonality for more on deforestation.

Child mortality is an indicator often used to assess the health situation in a country, and Tajikistan's rates are very high. In 2004, according to the WHO, 120 out of every 1,000 boys in Tajikistan died before their fifth birthday in 2004, while 115 out of every 1,000 girls suffered the same fate (2006b). These rates are nearly identical to those in Haiti, which is the worst off in the Americas. In the African context, Tajikistan's rates are higher than those in the Congo and slightly lower than those in Zimbabwe (Ibid). While Tajikistan has the highest child mortality rates in the former Soviet Union, the figures in the two hardest hit countries, Sierra Leone and Afghanistan, are approximately twice as bad (Ibid).¹⁵ For comparison, European countries lose only 2 or 3 children out of every 1,000 before they turn 5 years old (Ibid).

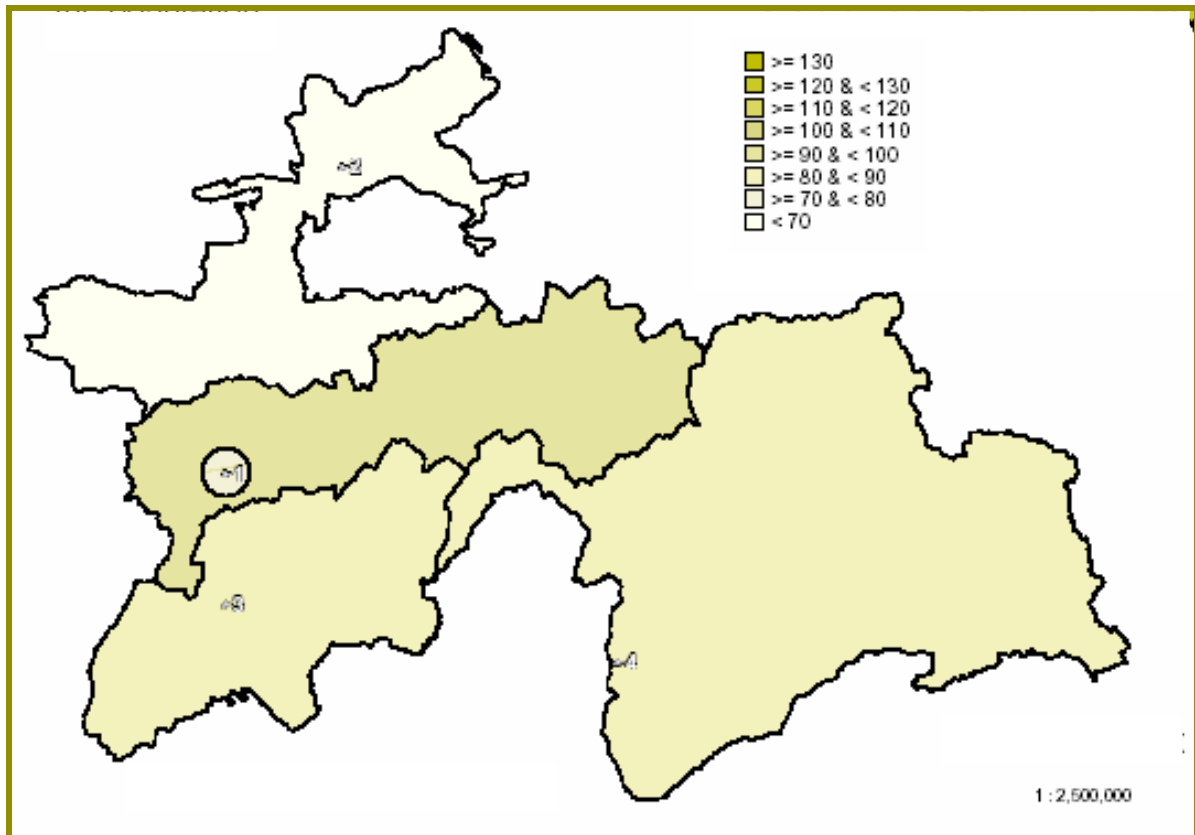
Furthermore, rural child mortality, with the exception of Sugd oblast, is higher than urban child mortality. The following maps compare mortality of children in rural areas by district to urban areas by oblast.

¹⁵ Haiti's child mortality rates in 2004 were 122 male deaths per 1,000 and 112 female deaths per 1,000. The Congo had 113 male and 103 female deaths; Zimbabwe had 136 male and 121 female deaths; Sierra Leone, worst off in Africa, had 296 male and 269 female deaths; and Afghanistan, worst off in North East Africa and the Middle East had 258 male and 256 female deaths (WHO, 2006b).



Map 3.d, Rural Mortality Rate of Children 5 and Under by District (WB et al, 2005)

This map makes evident that mortality rates are both high and widespread in rural areas. The majority of rural districts are at or above the national child mortality rates indicated above. The northern part of Sugd oblast, however, has lower rates. This area benefits from infrastructure, including the Kairakkum Reservoir, good roads and railways, natural gas, and healthcare all secured during the Soviet Union when Khujandis were in power (see section 2.4 for more on regionalism). This infrastructure was not lost during the Civil War because fighting occurred primarily in the south. Urban areas, including Khujand, Dushanbe, Qurgonteppa, Kulob, and Khorugh all enjoy these relatively lower mortality rates, though they are not exemplary either.



Map 3.e, Urban Mortality Rate of Children 5 and Under by Oblast (WB et al, 2005)

In sum, the above trends pose significant challenges to rural households on a day-to-day basis. Like the shocks described above, they, too, negatively impact the vulnerability context, making it difficult for the rural population, especially women, to survive and sustain themselves. Declines in the education system, the widening gender gap, and an increase in disease compromises social and human capital. Population growth creates additional demand on natural capital, while poverty drives some rural households to engage in livelihood practices that threaten the supply of their natural capital. Such pressures can precipitate a vicious cycle of poverty that is very challenging to break in the absence of outside intervention.

3.2.3 *Seasonality*

The literature on sustainable livelihoods indicates that seasonal shifts pose some of the most entrenched challenges to rural households. DFID cites examples such as fluctuations in prices, employment opportunities, and food availability as particularly relevant cycles (1999, 2.2). While abrupt price changes on the international market would be considered a shock, local changes based on agricultural cycles are considered seasonal occurrences. Unemployment and lack of food are serious problems during harsh winters following compromised harvests, especially in countries like Tajikistan which are heavily agrarian and lack adequate trade infrastructure. These are among the other seasonal phenomena that occur nearly every year in Tajikistan, including floods and mudslides, locust infestations, and deforestation.

In the spring, melting snows swell rivers and, combined with the deforestation, cultivation, overgrazing, and erosion of unstable, steep slopes, cause floods and mudslides. Strip mining and road building also contribute to the destabilization of land. Approximately 50,000 landslides occur each year (UNECE, 2004, 17) and IOM has identified 700 families who are in immediate need of being relocated, in addition to more than 10,000 families that may become environmental migrants in the next five years (Qtd in *ibid*).

With the arrival of summer, farmers often have to contend with swarms of locusts. These come from Afghanistan and Uzbekistan, and can destroy a large percentage of the harvest. Reports indicate that this year's infestations are particularly severe, causing

farming families to seek out alternative livelihoods, especially migration to Russia (IWPR, 2006). Farmers and ministry officials cite the lack of pesticides and organized eradication programs as the main problems. While officials seek out additional funding from international donors, many critics are skeptical about whether or not this money actually reaches or benefits rural households (Ibid).

In the late summer and fall, fruit and vegetable harvests are ready to be brought to market. Due to a lack of storage facilities, harvests flood local markets simultaneously, thus pushing down prices for farming families. Furthermore, the fall brings with it the cotton harvest and child labor in the fields. This phenomenon is discussed as an unsustainable livelihood strategy in section 3.5.

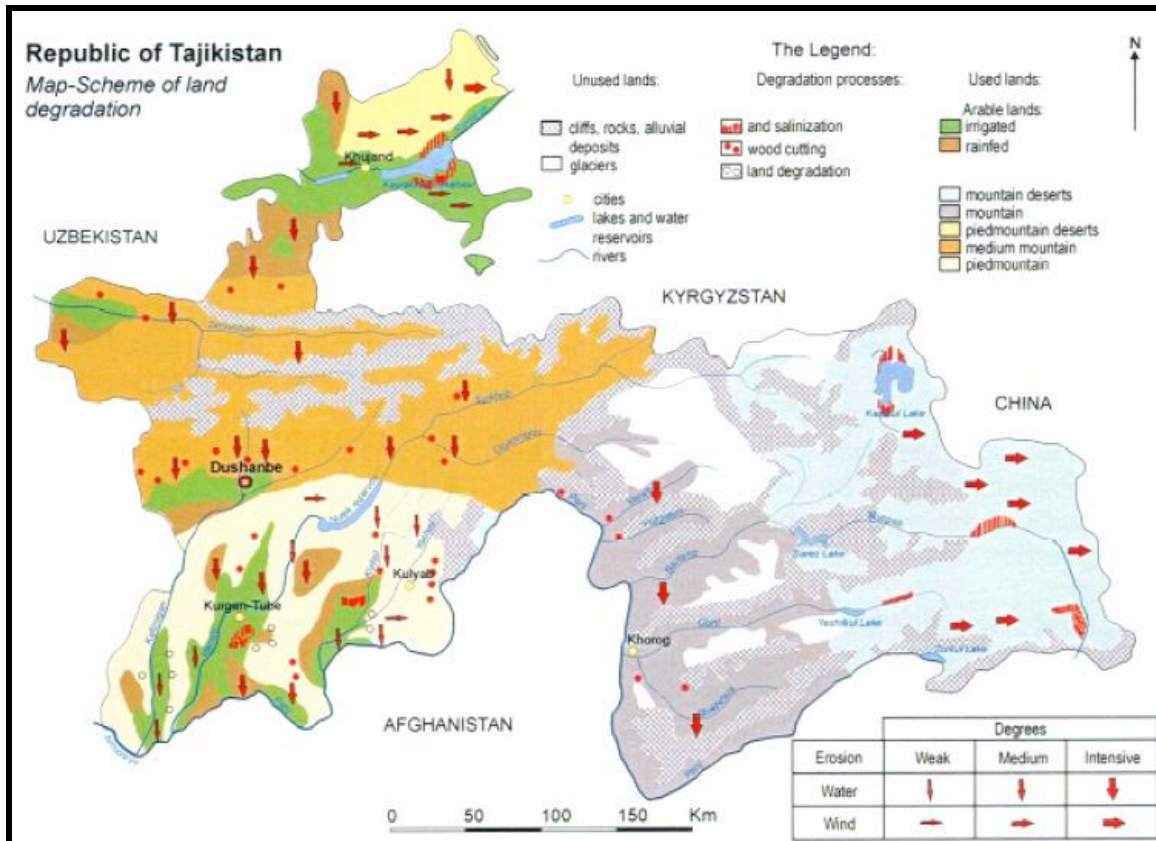
Finally, in the winter, seasonal deforestation occurs, especially in remote mountainous areas. Lack of electricity, due to emptied hydroelectric reservoirs, and lack of natural gas piping result in rural households turning to traditional sources of fuel for heating, cooking, and lighting. The deforestation that ensues is discussed in detail as a process of natural capital loss in section 3.3.

The purpose of analyzing the shocks, trends, and seasonality of the vulnerability context was to situate households within the broader, rural context. Rural households clearly face burdensome challenges on a day-to-day basis. Population growth, gender inequality, poverty, and disease were all shown to be factors that compromise rural livelihood options. Such pressures simultaneously increase the demand for natural capital, through

population growth, while also threatening its supply, through unsustainable livelihood strategies. While some processes of natural capital loss were described above, the next section goes into more breadth and depth, including issues of distribution and access. Rural livelihoods, loss of natural capital, and compromised livelihood options are all considered carefully.

3.3 Rural Livelihoods and Natural Capital

The loss of natural capital compromises rural livelihood options and outcomes, perpetuating a vulnerability context in which conflict is more likely to occur. This section analyzes rural Tajik households and their natural capital holdings - with a focus on pastoralism and farming – as well as attendant processes of natural capital loss and compromised livelihood options. The map from UNDP below gives a good overview of land degradation (2005), an essential form of natural capital. Predominantly farming livelihoods, especially cotton production, are practiced in the irrigated (green) and rain-fed (brown) areas of the map, while predominantly pastoral livelihoods are practiced in the mountain (grey) and mountain desert (ice blue) areas. A mixture of both livelihoods is always present, especially in the foothills (cream) and medium mountains (orange).

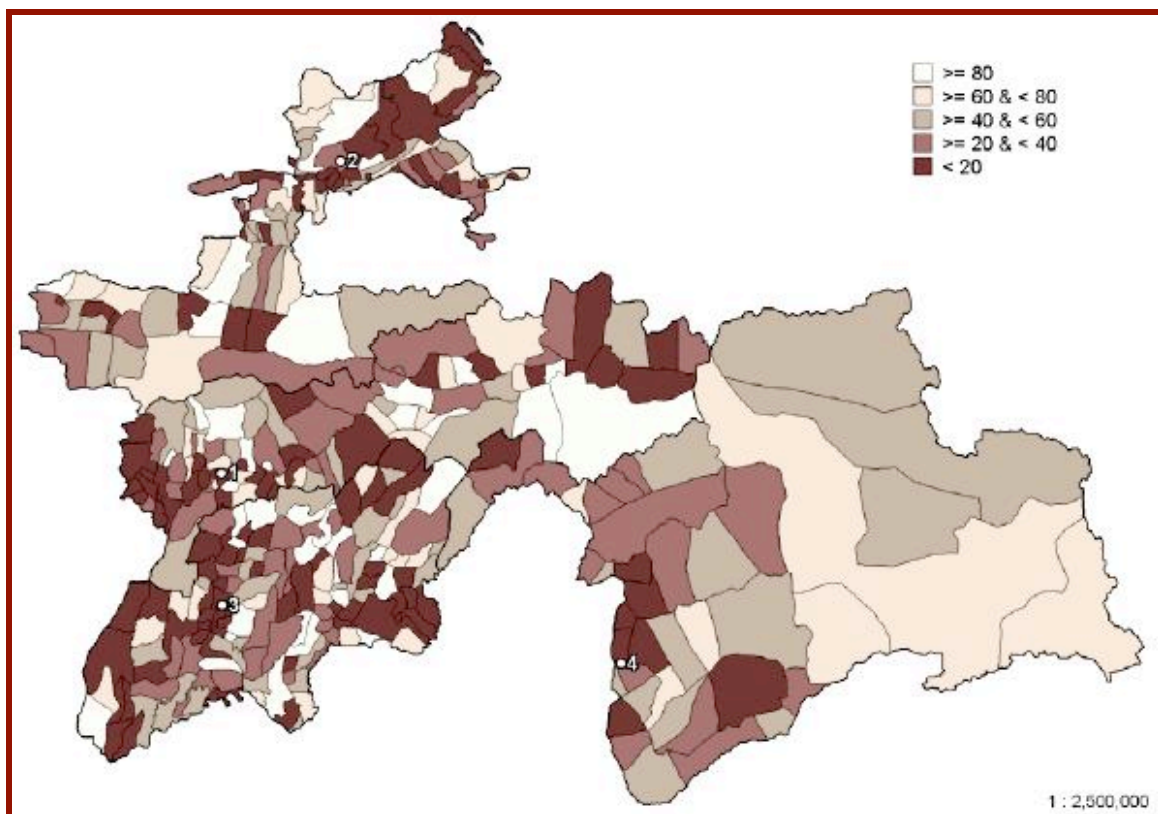


Map 3.f. Land Degradation in Tajikistan (UNDP, 2005)

3.3.1 *Income Mixes and Natural Capital Holdings among Pastoral and Farming Households*

Given the obstacles that rural households have to surmount in order to access and control natural capital, livelihood diversification is of utmost importance. Diversified livelihood strategies are a "...portfolio of activities and social support capabilities [used by households] to survive and improve their standards of living" (Ellis, 1998). Pastoralism and farming are both agricultural livelihoods with the former focused more on livestock and the latter more on crop production. Rural households usually combine these practices, in addition to non-agricultural forms of income, such as salaries, remittances, and/or pensions.

A tendency toward livestock holding predominates in the vast and sparsely populated mountainous regions, such as in GBAO. Mountain valleys and plateaus in GBAO are at altitudes between 3,000m and 4,000m, limiting crop production to 200 to 230 days per year (Breu and Hurni, 2003, 8). Furthermore, arable land constitutes only 0.4% of the oblast's total area (Ibid). The steep valleys and short growing season make farming challenging, so pastoralism is of greater significance for rural livelihoods. Herds of cattle, sheep, and goats are most common, with many families also keeping chickens (World Food Program (WFP) in UNECE, 2004, 138). Yak herds are common in the large district of Murghob, which constitutes the high mountain desert plateau of the eastern Pamirs, clearly indicated below by high percentages of grassland.



Map 3.g. Percentage of Land Classified as Grassland (WB et al, 2005)

Pastoralists, however, typically have a diversified mix of income sources, dependent on location and altitude. In the first effort of its kind, the *2003 Baseline Survey of GBAO, Tajikistan* was produced by the Aga Khan Foundation's (AKF) Mountain Societies Development Support Program (MSDSP), involving 700 households in 60 villages across all of GBAO's districts and covering the period July 2002 through June 2003 (2004). The survey showed that, on average, 38% of households' income came from livestock, 33% from farming, and 29% from non-agricultural sources (MSDSP, 2004, 36). Though the sale of livestock generated a significant portion of some households' cash income, only a small percentage of families sell livestock or livestock produce, indicating that the income generated is primarily non-cash in the form of consumed milk, eggs, and meat. Indeed, only 14% of households had sold cattle in the previous year; 12% sheep; 10% goats; 5% yaks; 4% chickens; and 2% turkeys (Ibid, 31). Cereals and potatoes constituted the largest portion of farming income, although, like livestock, this produce was primarily for household consumption. Only 3% of households sold cereals, and 16% sold potatoes (Ibid, 36). However, while 81% of households grew potatoes, only 13% were self-sufficient in these staples (Ibid, 7). Finally, 48% of non-agricultural income was generated by salaries; 21% by remittances; 16% by pensions; 8% by private business and trading; and 6% by casual labor (Ibid, 16). The following graph shows the income mixes of households in each district.

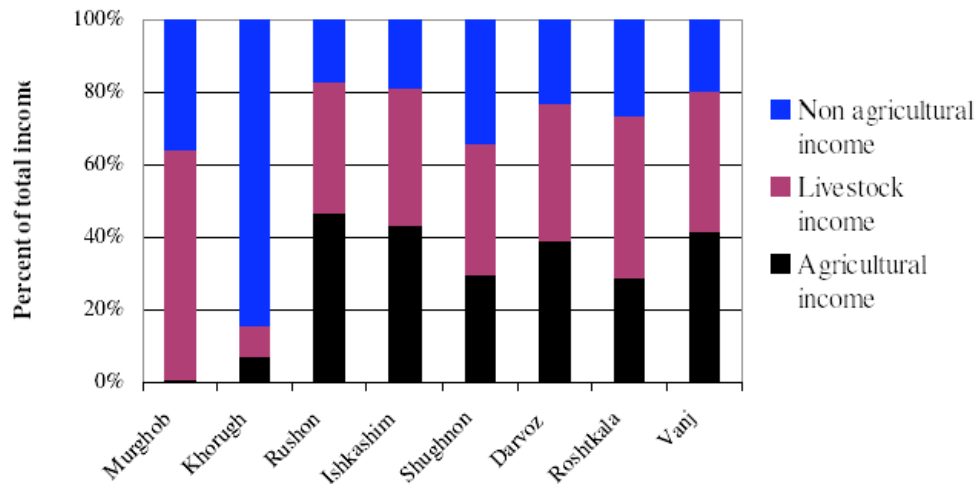


Fig. 3.h, Income Sources for Households in GBAO by District (MSDSP, 2004, 13)¹⁶

Generally, non-agricultural, livestock, and farming incomes were roughly balanced. Such livelihood diversity can contribute to a greater degree of security for rural households. The only two exceptions to this phenomenon were the districts of Murghob and the city of Khorugh. Murghob district is the largest by territory in GBAO and covers the high altitude eastern Pamir plateau, where farming is nearly impossible. On the other hand, pastoralism is widespread, having accounted for over 60% of household income. Khorugh, the capital of GBAO, is where most of the administrative jobs are concentrated. The salaries earned by Tajiks working for international organizations explain the overwhelming proportion of non-agricultural income in this, the largest city in the oblast.

In spite of some degree of diversity, rural livelihoods in GBAO, excluding the city of Khorugh, still rely heavily and directly on natural capital. Based on Fig. 3.h, above, rural households depend on pastoralism and farming for nearly 75% of their income, indicating

¹⁶ In this graph, “agricultural income” refers to what I have been calling “farming income.”

that land, water, and livestock are of utmost importance. Given this high degree of dependency, household natural capital holdings are explored next.

Households' land plots are distributed inequitably and are exceedingly small in GBAO. Land reform during the 1990s has meant that 84% of households have homegardens, and 70% have access to private arable land (MSDSP, 2004, 6). This indicates that a significant portion of the population is landless, forced to rent land, or depends entirely on common hayland and pastures. Indeed, 11% of the poorest quartile has no access to land; 2% of the second quartile; and 1% of the third (Ibid, 22). The 5% in the wealthiest quartile who do not chose to own land are most likely those with non-agricultural incomes with homes or apartments in Khorugh. The poorest quartile of the population, those in the greatest need, has access to the least amount of land, on average a meager 0.30 ha per household (Ibid, 22). This plot size includes the homegarden, rented lands, private lands, and common hayland. The second, third, and fourth wealth quartiles have access to approximately twice as much land, with an overall average farm size of 0.55 ha per household (Ibid). With an average household size of 6.8 persons (Ibid, 18), this leaves only 0.08 ha per person, far below 0.50 ha, the plot size generally recognized as the food security threshold (Scherr, 1999). Even if one argues that households, given that they generate 25% of their incomes from non-agricultural sources, should only require 75% of the minimum land requirements, they are still left with less than one fourth the necessary hectares. Furthermore, this argument is a mute point given that the combined income generated by households in GBAO is already disastrously low. In addition to the inadequate size of land plots, there is evidence that soil fertility is declining, especially

for the poorest farmers. These processes of natural capital loss are analyzed in the next sub-section.

Water is another essential, yet scarce, form of natural capital for rural families in GBAO. First of all, more than 90% of rural households in GBAO do not enjoy the health benefits associated with having piped water in the home (WB et al, 2005), while nearly 60% of households lack access to piped water on their land or in their neighborhood (MSDSP, 2004, 6). As was made clear in section 3.2, consumption of contaminated water causes diseases and loss of human capital among rural household members. Indeed, lack of piped water also results in individuals consuming inadequate amounts of water, a trend which is explored in more detail below.

Beyond human usage for drinking, cooking, and bathing, water is essential for crop irrigation. Indeed, rain-fed farming in GBAO is only viable in the lowest altitude district of Darvoz, leaving the rest of the oblast to depend on irrigation. Even in Darvoz district, however, rain-fed wheat yielded 815 kg per ha, whereas elsewhere irrigated wheat yielded over three times as much, 2,604 kg per ha (MSDSP, 2004, 30). As one might expect, Darvoz district and Khorugh city have the least amount of irrigated arable land per household, while Murghob has none at all.

District	Average area per hh ha
Darvoz	0.16
Ishkashim	0.44
Khorugh	0.03
Roshtkala	0.26
Rushon	0.39
Shughnon	0.31
Vanj	0.46
Total	0.30

Fig. 3.i, Irrigated Arable Land per Household in GBAO by District (MSDSP, 2004, 23)

Lack of rain reduces the amount of useful land to that which is arable and irrigated.

These figures only include homegardens and private and rented arable land, while excluding private and rented hayland and orchards, as well as common hayland. Taking this into account, the average household owns or rents 0.04 ha of non-irrigated land, which is of little productive value (MSDSP, 2004, 22-23). Though this may seem like a small figure, it amounts to over 7% of the land accessible to an average household. In these ways, lack of irrigation infrastructure and inadequate rainfall contributes to water scarcity that compromises rural land holdings in GBAO.

Given that rural households in GBAO depend on livestock for the greatest share of their income (MSDSP, 2004, 36), it is troubling to note the small size of their holdings, especially among the poorest segments of the population. While the biggest herds, unsurprisingly, are still in Murghob district, herd size has declined since the Soviet period and virtually no herds of commercial size remain (Ibid, 6). Cattle are owned by 72% of households; goats by 68%; sheep by 60%; and chickens by 43% (Ibid, 24).

Unfortunately, the size of these herds and flocks is small. Only 4% of households own more than 5 cattle; 17% have more than 10 sheep and goats; and only 4% have more than 20 (Ibid, 6). Even in Murghob, the average number of cattle and yak per household is only 12 and the combined number of sheep and goats is only 4. Furthermore, 26% of the population owns no cattle or yak at all, and 16% own no sheep or goats (Ibid, 25). The following table shows both the small size of herds and flocks, as well as the correlation between them and poverty.

Income quartile	Number hh in quartile	Cattle	Sheep	Goat	Chicken	Bees	Duck	Turkey	Donkey	Horse	Rabbit	Yak
1	174	0.6	1.8	1.7	1.1	0	0	0.2	0.1	0	0	0.2
2	174	1.8	2.8	2.8	1.8	0.1	0	0.1	0.4	0	0.1	0.4
3	174	2.3	3.6	3.5	2.4	0	0	0.2	0.2	0	0.1	0.3
4	174	2.5	4.7	3.8	4.2	0.1	0	0.7	0.2	0	0.1	0.5
Total sample	696	1.8	3.2	2.9	2.4	0.1	0	0.3	0.2	0	0.1	0.3

Fig. 3.j. Number of Livestock per Household in GBAO by Wealth Quartile (MSDSP, 2004, 24)

Though some of the differences in livestock ownership are insignificant, households in the wealthiest quartile, on average, own the most cattle, sheep, goats, chickens, turkeys, and yaks, while the poorest quartile owns the fewest of almost every type of animal. Clearly, there is a strong correlation between wealth and the ownership of livestock in GBAO. Unfortunately, even the wealthiest households' flocks number, on average, fewer than 5 sheep and 4 goats. Livestock is a critically important form of natural capital for households in rural Tajikistan, but such small herd sizes cannot sustain a pastoral

livelihood. In the case of sheep, for example, 30 animals are required per person to ensure a sustainable livelihood (Breu and Hurni, 2003, 43).

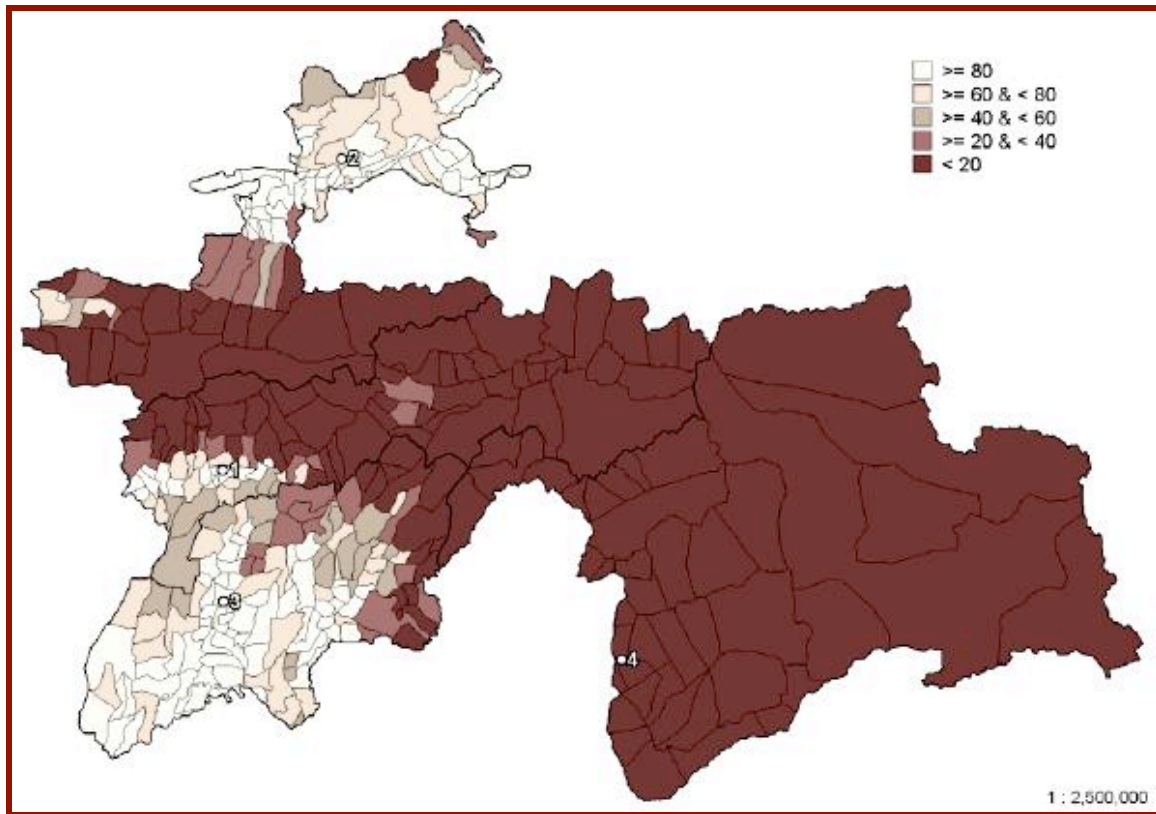
Ultimately, the scarcity of land, water, and livestock, essential forms of natural capital for pastoralists, is restricting rural livelihood options. Furthermore, these resources, as explained below, are threatened by processes of natural capital loss. First, however, the analysis turns to the income mix and natural capital holdings of farming households in Khatlon oblast.



Fig. 3.k, Tajikistan's State Emblem, (Tajik Government, 2002)

Downstream from the high mountain valleys, primarily in Khatlon and Sugd oblasts, cotton monoculture dominates agriculture. Indeed, 75% of arable lands are dedicated to its production. Cotton is a very water and work-intensive crop responsible, along with the deteriorating irrigation infrastructure, for the Aral Sea catastrophe (ICG, 2005b).¹⁷ However, cotton remains the national pride of Uzbekistan, Turkmenistan, and Tajikistan, featuring, for example, on the latter's state emblem, above. Cotton is referred to as the "white gold" in state campaigns. Though wheat also appears on the emblem, it is subordinate to cotton. Since 2003, the land in Tajikistan cultivated with wheat has been reduced by 11,000 ha (German Agro Action (WHH), 2006). Optimal agricultural lands, defined as those below 1,800 meters and with a slope of less than 10%, are dominated by cotton cultivation and located in Khatlon and Sugd oblasts, as well as part of RRS, indicated on the map below.

¹⁷ The Aral Sea was once the world's fourth largest inland body of water and supported a flourishing fish industry. It straddles the Uzbek and Kazakh border. Due to the intensive diversion of water from the Amu Darya and Syr Darya rivers to irrigate cotton monoculture, the Aral Sea had shrunk to 25% of its original size by 2003 (Hveem, Petter for Medecins Sans Frontieres (MSF), 2003). This has stranded local populations that were highly dependent on fishing and has caused an economic, health, and environmental catastrophe, with tuberculosis infections among the highest in the world (Ibid).



Map 3.h, Percentage Cover of Optimal Agricultural Land (WB et al, 2005)

This “optimal” definition, however, does not include such critical factors as water availability and soil fertility, which, along with livestock, are key forms of natural capital for farming households.

Though there is less empirical data currently available about income mixes in predominantly farming areas, the importance of natural capital is still clear. From my own experiences living in rural Uzbekistan, I observed that farming households, like their pastoral counterparts, depend on a combination of crop production, livestock holding, and non-agricultural sources of income. This holds true, for example, of our former neighbors, the rural farming family described at the beginning of this paper. The 5-

member family planted crops for their own consumption, kept cattle and chickens, and supplemented these agricultural sources of income with construction work and elementary school teaching. In fact, all of the rural families I have ever met in Uzbekistan, Kyrgyzstan, and Tajikistan, which probably number over 100, combine agricultural and non-agricultural livelihood strategies. It is reasonable to think that non-agricultural income, as a percentage of total income among rural farming households, is comparable to that in rural GBAO, or 25% (MSDSP, 2004, 13), with farming income outweighing livestock income. Given this high degree of dependence on agriculture, farming households' access to land, water, and livestock is assessed next.

The current government ostensibly completed privatization of land in January 2006, but no significant changes have come to pass in cotton growing areas (MSDSP, 2005, 9 and Porteous, 2003). Unfortunately, the term "privatization" is a misnomer, given that all land remains the property of the state, on long-term, inheritable lease to farmers. Households may not sell their land or even use it as collateral (MSDSP, 2005, 9), thus eliminating its use as a source of financial capital. Farmers are rarely given land use certificates and they still have to belong to a farming association in cotton areas, which largely dictates what they plant, when they plant it, and to whom they sell it. If the state deems that the land is not being used properly, it can be repossessed at any time (ICG, 2005b). "[A]side from ... cosmetic changes [in the agricultural sector], business continues as usual" (Porteous, 2003, 6). This indicates that cotton remains the predominant crop.

Those households that do secure the right of land usage are most often wealthy and connected with local government officials, and receive the largest and most fertile plots (ICG, 2005b, 8 and MSDSP, 2005, 9). The poorest households stand little chance of securing the right to use land, as illustrated below.

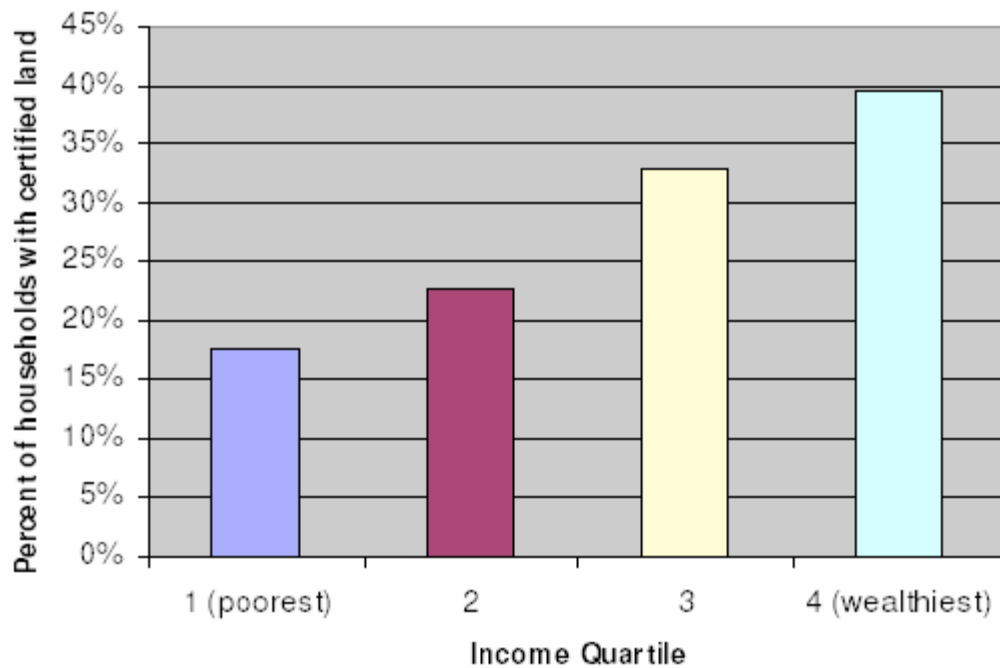


Fig. 3.1, Percent of Households with Certified Land by Income Quartile in Khatlon Oblast, 2004 (MSDSP, 2005, 12)

The above figure shows a clear and linear correlation between wealth and ownership of land. Of those surveyed, 42% stated that they could not afford the costs, both formal and informal, of purchasing a land certificate (MSDSP, 2005, 12). Indeed, informal fees, or bribes, more than doubled the cost of land certificates in Khatlon to approximately \$70 or, on average, three months' worth of income (Ibid, 13).

Women are especially disempowered concerning land tenure. Of the small percentage of privatized land, women officially administer only 4%, though real power often belongs to a male relative. A local NGO estimated that women, in reality, directly administer only 1% of private farmland (ICG, 2005b, 17, interview with Muhabbat Mamadaliyeva, Director of *Zan va Zamin*, Dushanbe, July 2004). Female-headed households, as explained in section 3.2, are among the poorest households in rural Tajikistan (WB et al, 2005). Given the correlation between poverty and lack of land certificates (MSDSP, 2005, 12), in addition to cultural traditions that discourage women from administering land, female-headed households must own a very small portion of Tajikistan's already scarce arable land.

Access to land for farming households is limited and average plot size is very small. In a survey of 1,000 households in 5 districts in Khatlon oblast, Obie Porteous, on behalf of AAH, reported on household access to land, as well as plot size in terms of homegarden, Presidential,¹⁸ rented, and so-called "private" land (2003).

	Households with Access	Average Size of Plot
Homegarden	99.3%	0.146 ha
Presidential Land	70.0%	0.115 ha
Rented Land	6.8%	1.31 ha

¹⁸ Presidential lands, small plots on the margins of state farms, were made available by decrees in 1995 and 1997 in an attempt to stem food insecurity (Porteous, 2003, 5).

		(0.1 to 5 ha range)
“Private” Land	3.5%	17.2 ha (1.48 to 124 ha range)

Fig. 3.m, Households with Land Access and Plot Size in Khatlon Oblast (Data source: Porteous, 2003, 4-5)

While the above table does not include common pasture, orchard, and hayland, it can be concluded that at least 89.7% of the rural population in Khatlon is restricted to owning homegardens and/or Presidential Land. These types of plots, of course, constitute the smallest land area, totaling an overall average of 0.225 ha per household. Access to such paltry plots of land is not sufficient to ensure the food security of even one individual, which is recognized as being 0.50 ha (Scherr, 1999). Even if plot requirements are reduced based on the estimate that 25% of income in farming areas is derived from non-agricultural sources, average household plots only amount to three fifths of the adjusted threshold. Therefore, the vast majority of rural farming households include members who are forced to migrate and others who work on state farms to supplement their incomes with low and sporadic wages or in-kind compensation. The viability of these livelihood strategies is discussed in section 3.5.

Water, both for domestic consumption as well as crop irrigation, is in short supply for rural households, both farming and pastoral. According to the UN’s World Water Assessment Program (UNWWAP), an individual needs between 20 and 50 liters of uncontaminated water each day to ensure the basic needs of drinking, cooking, bathing, and disposing of excrement (2003). Even granted that pit toilets, which require no water,

are in widespread use across arid, rural Central Asia, the following figures are still far too low to ensure proper nourishment and sanitation for rural households. As mentioned above, this is due, in part, to the lack of water piping into rural homes.

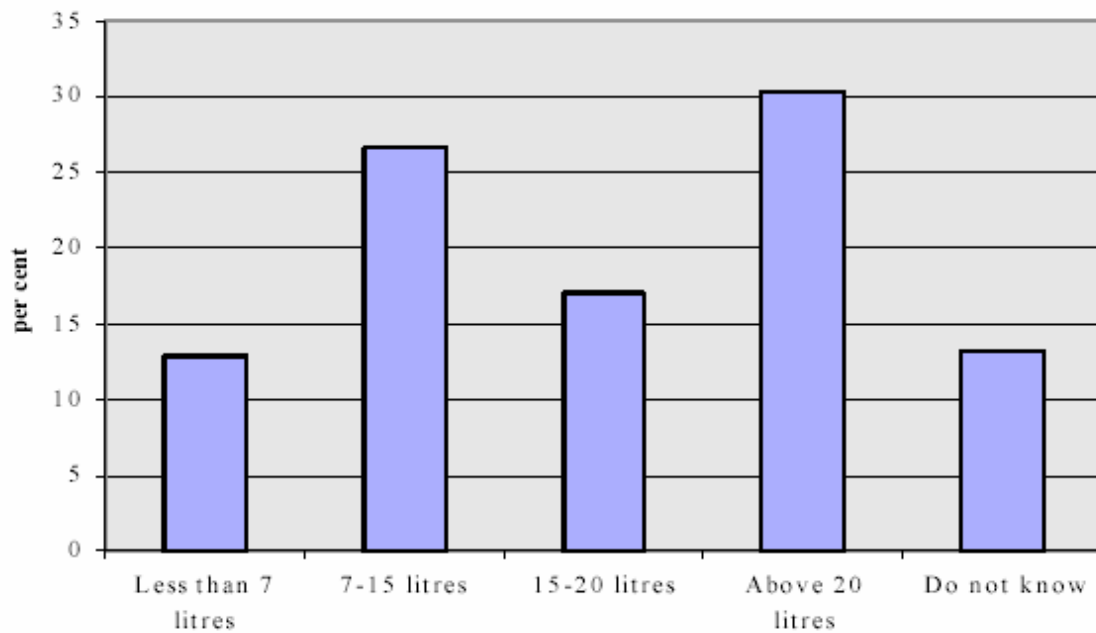


Fig. 3.n, Rural Domestic Water Use per Capita per Day, 2003 (European Commission Humanitarian Aid Office (ECHO), 2003 in UNECE, 2004, 110)

If those who responded that they “Do not know” their daily water consumption are proportionally distributed over the other four groupings, only 36% of rural individuals consume more than 20 liters per day, the lowest threshold for water security, sustenance, and health. This figure, however, would surely be lower if contaminated water were deducted from the total.

In addition to domestic water insecurity, farming households lack the irrigation necessary to ensure water security for their crops. In a recent survey conducted by the MSDSP, 247 households were interviewed in three districts of Khatlon (2005). Among other questions, MSDSP asked farming households about their access to and usage of primary and secondary irrigation canals, which are supposed to be maintained by the state. The results are illustrated in the figure below.

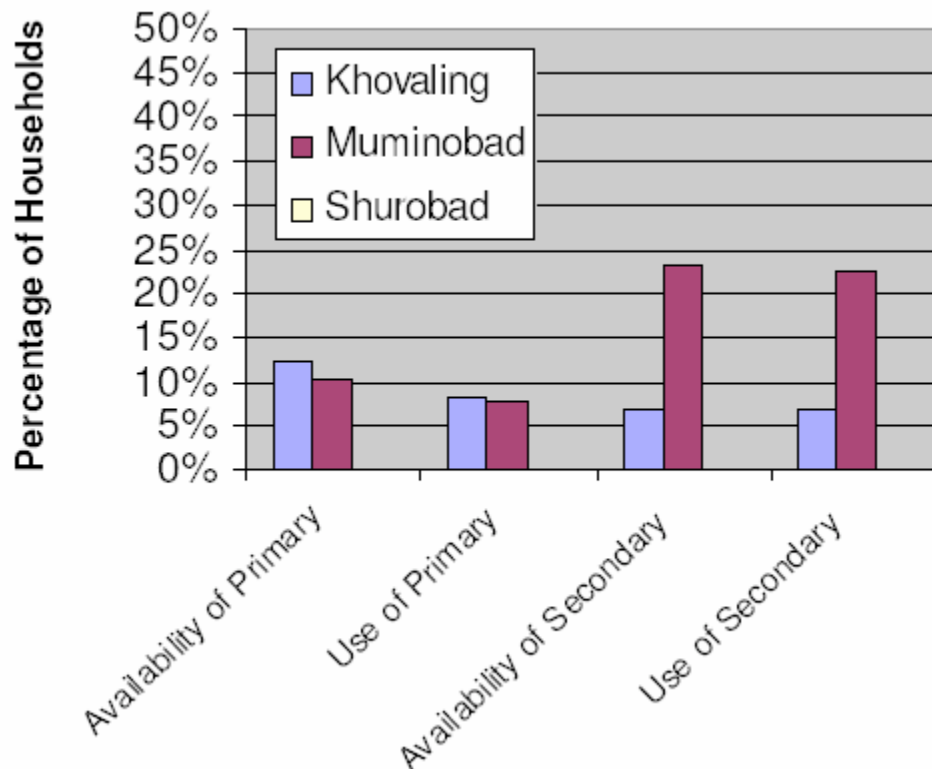


Fig. 3.o, Availability and Use of Irrigation Canals by Rural Households in Khatlon Oblast by District (MSDSP, 2005, 63)

Depending on district, between 0% and 8% of households surveyed has access to and uses primary canals, while 0% to 23% uses secondary canals. While it is clear that

Shurobad does not benefit from irrigation, even those districts that benefit most have very limited access to irrigation infrastructure. Given the paucity of rain-fed lands in Khatlon (see Map 3.f, above), this represents a dire situation. In fact, only 13% of the total respondents surveyed could claim that they had access to state irrigation systems (MSDSP, 2005, 63).

Livestock production in Tajikistan has severely declined since Soviet times. Though I was unable to find data on the ownership of livestock per household in cotton growing areas, the overall trends in livestock production are quite clear. From 1990 through the end of the Civil War in 1997, livestock production dropped to 15% of levels in the 1980s (UNECE, 2004, 140). State herds were decimated, with 85% of livestock now scattered in small, private herds (Ibid, 141), a trend confirmed by data from GBAO, above. Since 1997, herds have begun to recover, though they were only at 30% of 1980s levels as of 2004 (Ibid). Such loss of natural capital has surely had negative effects on both pastoral and farming households.

All the same, livestock still constitutes an important form of cash income for some farming households, though ownership is not evenly distributed over wealth quartiles. As in GBAO, the poorest farmers in Khatlon can rarely afford to own large livestock, such as cattle (MSDSP, 2005, 44). However, the sale of livestock, both large and small, supplements yearly cash income for some households.

Type of Stock	Percent of CPS Households Selling	Average Sale per HH (# of animals)	Average Income from Sales
Cattle	21%	1.2	683 TJS
Goat	20%	2.2	205 TJS
Sheep	12%	1.5	181 TJS
Chicken	4%	n/a	21.5 TJS

Fig. 3.p, Livestock Sales and Cash Income for Households in Khatlon Oblast (MSDSP, 2005, 45)¹⁹

As the table indicates, cattle sales generate the greatest sum, amounting, on average, to an impressive 683 Tajik Somoni (TJS), or \$228, each year.²⁰ Such sales generally benefit the wealthiest farmers, while a fraction of other households sell goats or sheep for less than one third the cash generated by cattle sales. Such trends, of course, function to widen the gap between relatively wealthy and poor farming households. Chickens do not generate a significant amount of income and are usually consumed by households. Indeed, those who rarely sell their livestock can still benefit from consuming their own eggs, milk, meat, and even honey.

In sum, fertile land, clean water, and healthy livestock are essential, yet scarce, forms of natural capital for the viability of pastoral and farming livelihoods. Inadequately small plots of land, not even under legitimate private ownership, hinder the ability of rural households to ensure food security, while inadequate rainfall, water piping, and irrigation infrastructure cause water insecurity, health problems, and decreased land productivity. Finally, small private herds, though they provide important services and products to rural households, are greatly depleted. Land, water, and livestock are all threatened by various

¹⁹ CPS is an acronym for Client Perception Survey, the type of study conducted by MSDSP.

²⁰ The exchange rate of TJS to USD has been relatively steady for the past few years at approximately 3:1.

processes of natural capital loss. These, in addition to compromised livelihood options, are described below.

3.3.2 Natural Capital Loss and

Compromised Livelihood Options

Processes of natural capital loss occur in both pastoral and farming communities. In the former, livestock and land are under particular threat from livestock diseases and processes of overgrazing, erosion, and deforestation. Loss of biodiversity is also discussed as a threat to mountain communities. In the latter, the discussion is focused on cotton growing areas where water mismanagement and land degradation are of particular concern. Processes of historical deforestation, inefficient water management, desertification, and slow and inequitable progress in land reform are discussed. Furthermore, farmers, especially the poorest households and women, lack access to important physical, financial, and social assets, such as agricultural inputs and extension programs; modern storage and ginning facilities; credit and banking systems; and a just legal system.

As we have seen above, the vast majority of rural mountain households depend most heavily on livestock as their central source of natural capital. Therefore, the health of their herds is of paramount concern. Since the collapse of the Soviet Union, pastoral extension services have crumbled and trained professionals, including veterinarians, are lacking (Morgounov and Zuidema, 2001). Combined with the high density of herds around settlements, this means that animals are at a heightened risk of becoming diseased

and dying. One indicator of the lack of veterinary services and attendant disease is the low percentages of those households who own livestock and also vaccinate them.

	Cattle	Goats	Sheep	Chickens
Total hh owning animals	501	476	419	297
% hh vaccinating	%	%	%	%
<i>Anthrax</i>	21	3	5	-
<i>Foot and mouth</i>	58	8	14	-
<i>Emkar</i>	12	1	3	-
<i>Brucellosis</i>	15	4	9	-
<i>Newcastle</i>	-	-	-	29
<i>don't know</i>	9	2	5	1
Any	74	14	25	30

Fig. 3.q, Percentage of Households with Livestock in GBAO that Vaccinate by Livestock Type (MSDSP, 2004, 25)

Aside from cattle, which are over three times as valuable per head than goats or sheep (MSDSP, 2005, 45), the percentages of those that vaccinate small stock and chickens for at least one disease are very low. Foot and Mouth Disease seems to pose the greatest threat to cattle, goats, and sheep, though only 58%, 8%, and 14% of such animals receive vaccinations. Newcastle Disease is a common poultry disease in Tajikistan which wiped out entire chicken flocks in GBAO in 2003. Unfortunately, only 29% of chickens had been vaccinated (MSDSP, 2004, 25).

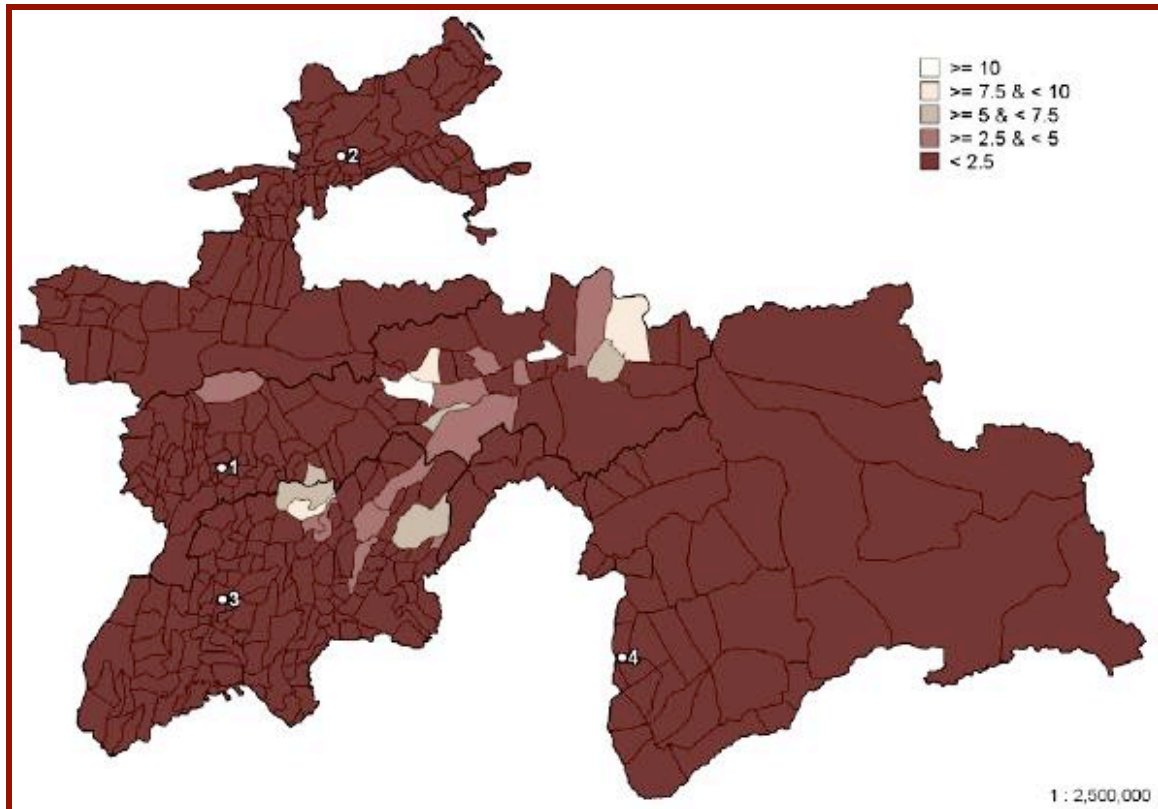
Land is important for both livestock holding and crop production, but it is being degraded by various processes. Poor distribution of herds and overgrazing contribute to the erosion of mountain pastures. A great deal of local pastoral knowledge was lost during the period

of Soviet collectivization. Tractors and trucks, instead of yaks and camels, were used to get shepherding yurts and supplies to high, distant pastures. With the collapse of the Soviet Union, tractors fell into disrepair or sat idle because of prohibitively high fuel costs and a deteriorating transportation infrastructure (Ibid, 22). Herd size has also been reduced to such an extent that pastoral households can not afford to make the effort of accessing summer pastures for the benefit of so few animals. Having, therefore, essentially lost the ability and desire to access high mountain pastures for the summer season, areas in the immediate vicinity of settlements have become overgrazed. This intensification causes erosion of almost all of the pastures in Tajikistan (UNDP, 2005).

Soil fertility in GBAO, to the detriment of pastoral households, has been in decline. In addition to overgrazing, deforestation has also caused erosion and loss of soil fertility. Each winter, the water collected in hydroelectric reservoirs from the spring snow melt has been depleted. In spite of the majority of homes having electrical wiring (WB et al, 2005), there is no electricity in the winter, especially in remote areas such as mountainous GBAO. Given that less than 5% of the rural population has natural gas piped into their homes (Ibid), lack of electricity in the winter causes a heavy reliance on traditional sources of fuel, especially wood, shrubs, and manure. Combined with relatively high population growth in GBAO²¹ and the absence of Soviet fossil fuel subsidies since 1991 (Zibung, Daniel in Breu and Hurni, 2003, 35), seasonal deforestation ensues. Overall,

²¹ GBAO, though sparsely populated, has experienced significant population growth. From 1926, just before the Soviets established control of present-day GBAO, to 2000, the population grew from 56,000 to 220,000 persons (Breu and Hurni, 2003, 10). Under the Soviet Union, the oblast was populated in an effort to solidify territorial control. In fact, women who could produce 15 children were awarded a medal and a Volga, a classy, Soviet automobile for 5 persons. Whether the honored mother ever got to drive the vehicle is another question. Furthermore, population growth in GBAO experienced a spurt during and after the Civil War, when it provided a somewhat safe haven from the conflict.

2,000 ha are lost each year at a rate of 0.51%, twice the world average (FAO Forestry website).



Map 3.i. Percentage of Land Classified as Forest (WB et al, 2005)

Indeed, Tajikistan has precious little forest left to lose. A mere 3% of the country's territory is covered by trees and shrubs, and only 10% of forests are composed of high growth varieties of trees (UNECE, 2004, 127). The total volume of the country's forests is approximately 5 million m³, indicating a very low productivity of 3 m³/ha (Ibid).

In a related process of natural capital loss, the practice of burning manure for cooking and heating diverts it from its traditional use as fertilizer, thus depleting soil fertility

(MSDSP, 2004). This phenomenon happens primarily in the winter when 96% of households in GBAO burn manure. Somewhat surprisingly, 52% of households also burn manure in the summer when electricity is readily available (MSDSP, 2004, 6). This could be due to a lack of electric stoves among rural households. Evidence of soil degradation can be seen in the 25% drop in potato yields in GBAO from 2002 to 2003 (Ibid, 7). Indeed, it has become increasingly challenging to provide fodder for animals through the long winters (Ludi, Eva in Breu and Hurni, 2003, 23), which has the additional impact of limiting the maximum size of herds.

Loss of soil fertility, evidenced by lower yields, is correlated with poverty. Those households that do not possess the financial capital to afford agricultural inputs or the social and human capital to access and benefit from trainings experience lower yields of key crops, such as potatoes.

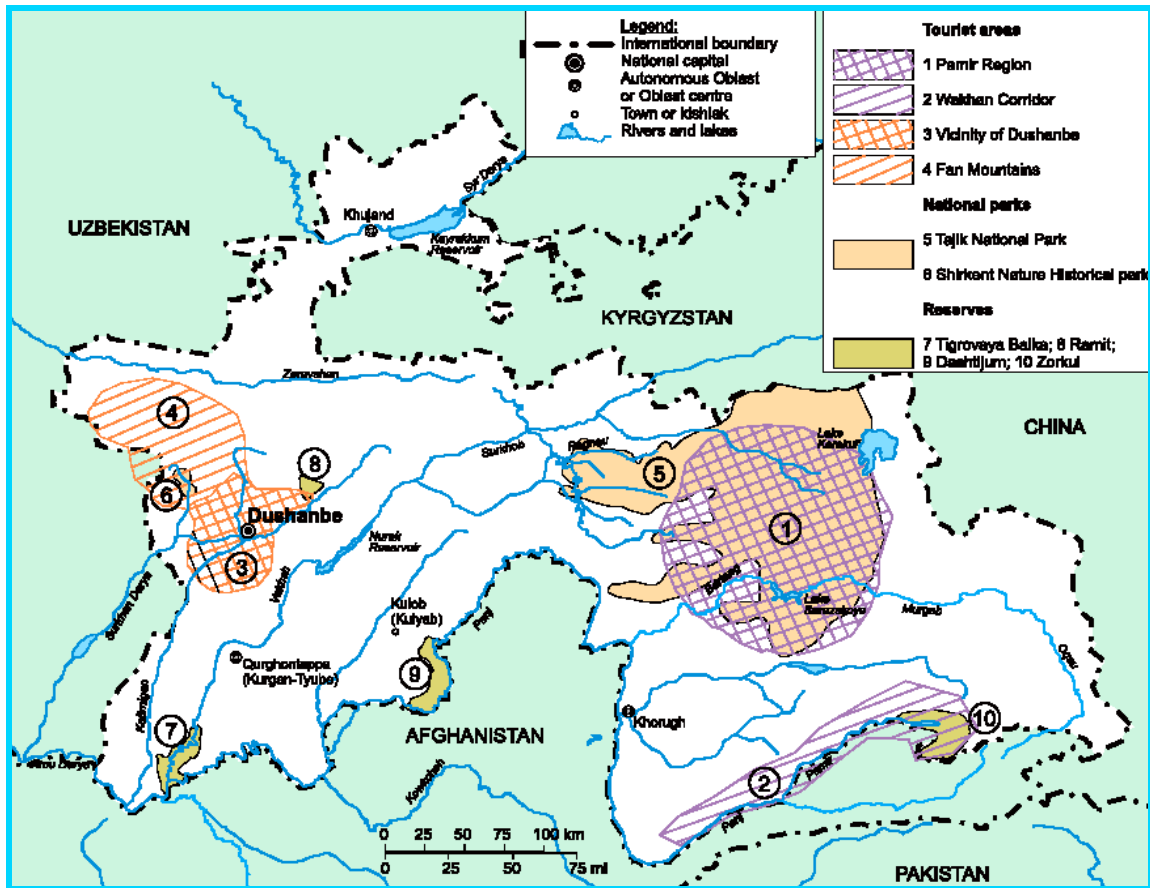
Income Quartile	No. hh responding	Average area ha per hh	Average production kg per hh	Average yield kg per ha
1	109	0.05	375	12,979
2	142	0.1	632	14,146
3	150	0.09	727	15,968
4	143	0.1	1,106	16,475
Total sample	544	0.09	731	15,027

Fig. 3.r, Potato Production in GBAO by Wealth Quartile (MSDSP, 2004, 30)

Households in the poorest quartile yield over 20% fewer potatoes per ha than households in the wealthiest quartile. Coupled with smaller plots of potatoes, the poorest farmers

only manage to produce approximately one potato for every three produced by the wealthiest farmers.

Deforestation, in addition to exacerbating erosion, landslides, and floods, also threatens biodiversity, an important form of natural capital. “Valuable juniper, birch, walnut, and pistachio forests have shrunk by 20 to 25%, and tree cutting has led to an outbreak of weeds [and] alien and quarantine plant species” (UNECE, 2004, 26). Poorly managed animal grazing destroys young trees and shrubs, stunting forest recovery (Ibid, 127). In this regard, one important forest service is the protection of mountain ecosystem biodiversity. Such biodiversity is a natural capital asset to mountain pastoral communities. Forests in Tajikistan contain over 60 varieties of medicinal plants, as well as nuts, onions, rhubarb, wild roses, and honey (Ibid, 127). Furthermore, hunting and fishing help enhance some rural households’ food security (Ibid, 129). Illegal hunting and fishing, however, remain difficult to monitor and sanction.



Map 3.j. Tourist Assets in Tajikistan (UNECE, 2004, 151)

Though largely untapped, the potential for ecotourism in mountainous Tajikistan is considered substantial by the government. Such tourism would rely, in large part, on protecting biodiversity, especially mammals such as the snow leopard, ibex, and Marco Polo mountain sheep (Ibid, 147), though significant infrastructure development would also have to be forthcoming. At present, ecotourism only benefits a tiny minority. If successful, ecotourism would constitute a non-agricultural form of income generation that is highly dependent upon biodiversity, a valuable form of natural capital.

All of the above processes of natural capital loss threaten the sustainability of pastoral livelihoods by compromising livelihood options. As land, water, livestock, and biodiversity become depleted and degraded, scarcity ensues. Population growth increases demands on the natural capital supply, which is inequitably distributed across wealth groups. Without sufficient natural capital, a higher dependence on migration results, in addition to unsustainable livelihood strategies, both of which are discussed in section 3.5.

Farming livelihoods are also threatened by natural capital loss and compromised livelihood options. Deforestation and extensification; poor management of the sprawling irrigation infrastructure; soil erosion, salinization, and desertification; and lack of comprehensive veterinary services threaten land, water, and livestock resources.

Deforestation and extensification of cropland have negatively impacted farming areas in Tajikistan, causing erosion of soils. Approximately 12% of the land currently under cultivation used to be forested with tugai, pistachio, almond, and broad-leaved forests before the 1930s, when the Soviets began extensification (UNECE, 2004, 127). Aside from the loss of forest biodiversity and livelihood value of the above-mentioned tree species, the exposed soil has lost fertility for lack of the tree's nitrogen fixing services. Though deforestation has created over 88,000 ha of cropland, much of it is tenuous and eroded, located on steep, marginalized slopes (Ibid, 138). In fact, recent trends in extensification involve the unregulated ploughing of up to 100,000 ha of steep pasture, which is occurring, for example, in the Hissor Valley of RRS (Ibid, 141). Erosion of such lands depletes the land of fertile topsoil, reducing its productivity.

The massive irrigation infrastructure, the largest part of which is in cotton growing areas, is highly inefficient, resulting in the loss of enormous quantities of energy and water.

The irrigation infrastructure was built primarily during the Soviet period and extends to approximately 93% of cultivated lands, a clear indication of the inadequacy of rainfall in this arid region (FAO, 2004). In fact, more than 60% of irrigated water is pumped *up* from rivers to crops planted on the eroded slopes discussed above, causing an inefficient waste of state-subsidized energy (WB, 2005). In 2002, water consumption by the agricultural sector amounted to over 5 times industrial and domestic consumption combined, as illustrated below.

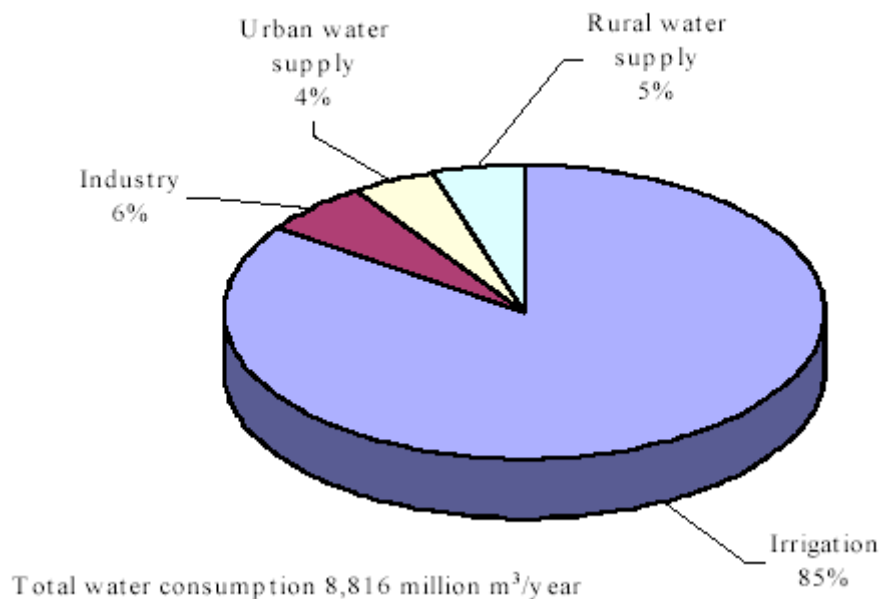


Fig. 3.s, Water Consumption by Sector, 2002 (Ministry of Land Reclamation and Water Resources, 2004 in UNECE, 2004, 107)

Since independence in 1991, and especially exacerbated by the Civil War, this infrastructure has fallen into disrepair, and great quantities of water are wasted through leaching or evaporation from canals. Indeed, approximately 96% of Tajikistan's irrigation network consists of open furrow canals made of dirt or cement that often lack proper drainage systems (FAO, 2004). Some areas do not receive enough water, while others, given inadequate drainage, become saturated. Waterlogging ensues with water tables within 3 meters of one third of all irrigated lands (UNDP, 2005, 40). Waterlogging leads to salinization, desertification, and erosion of otherwise arable land.

Erosion and salinization impact a high percentage of Tajikistan's arable land. In 2002, Tajikistan had a total of approximately 739,100 ha of arable land (SSC, 2002 in UNECE, 2004, 138). As the following table indicates, this land is threatened by processes of erosion and salinization.

Eroded land of total land resources (%)	82.3
of which water erosion (%)	58.8
of which wind erosion (%)	23.5
Irrigated land affected by salinization	132,007
of which weak salinization	93,920
of which moderate salinization	21,737
of which severe and very severe salinization	16,350

Fig. 3.t, Erosion and Salinization of Land Resources in Tajikistan, (WFP in UNECE, 2004, 138)

Already by 2000, 82.3% of land resources were eroded, in addition to 18% being affected by salinization. These figures have surely grown over the past six years. Indeed, the

UNDP reports that 50 million tons of soil continues to be lost to water and wind erosion and salinization annually (2005, 43).

Erosion and salinization cause declines in soil fertility and crop yields per hectare. In the 1980s, under a fully operational Soviet system that included clover-cotton and wheat-cotton crop rotations, 1 million tons of cotton was produced annually. Between the Soviet Union's collapse, the Civil War, and droughts, soil fertility suffered to such an extent that only 453,000 tons of cotton were produced in 2001. One government specialist in Dushanbe admitted, under guarantee of anonymity, that the lack of crop rotation is "...killing the land, and the Ministry of Agriculture is doing nothing" (ICG, 2005b, interview in Dushanbe, May, 2004). While the yield per hectare is, predictably, declining, the production of cotton has remained steady in recent years due to further extensification (ICG, 2005b).

In addition to widespread land degradation and water mismanagement, rural farming households also have to contend with threats to the health of their livestock. Like their pastoral counterparts in GBAO, farmers in Khatlon oblast, for example, often have to seek out private veterinary services to supplement incomplete state services.

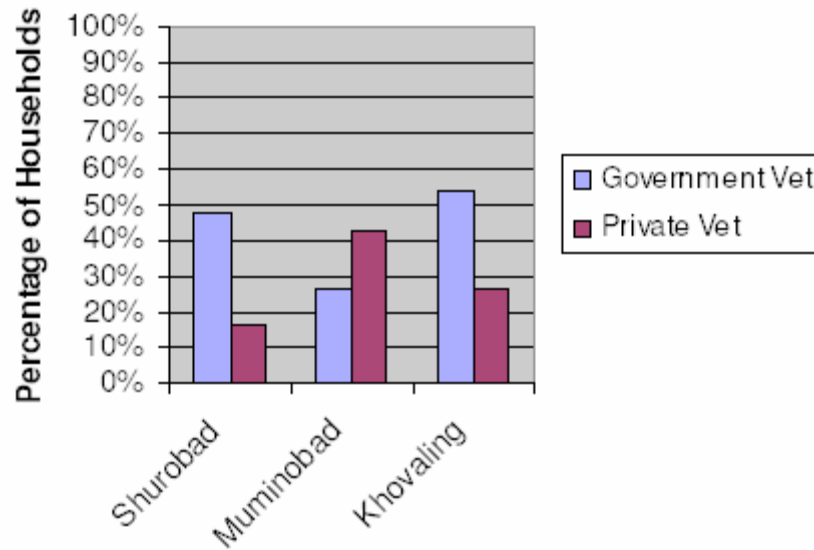


Fig. 3.u, Percentage of Households Utilizing Livestock Vaccinations in Khatlon Oblast by District (MSDSP, 2005, 46)

Accounting for the fact that households could be visiting both state and private veterinarians, the average percentage of surveyed households in Khatlon oblast that secure vaccinations for their livestock is between 48% and 70%. Granted that a small percentage of households do not keep livestock, these figures still do not represent comprehensive care. Though state veterinary services are supposed to provide free vaccinations for all households' livestock, free services are reportedly offered only in the case of anthrax and after epidemics (Ibid, 45). Once an epidemic has broken out, however, it is usually too late to save the infected animals. Furthermore, those farmers vaccinating their livestock through state veterinarians can only afford to vaccinate them against one of the three major diseases, anthrax, brucellosis, or foot and mouth (Ibid, 46). Others turn to the "private vets" indicated in the graph above. These are predominantly

veterinarians working on behalf of international NGOs, including Caritas, Counterpart International, FAO, Merlin, and MSDSP (Ibid, 45).

The loss of natural capital described above limits the livelihood options available to farming households. Land resources are degraded and difficult to access; water, at the household level, is scarce; and livestock numbers are declining and threatened by disease. These essential forms of natural capital are also threatened by continued population growth. While nearly all farming households struggle to survive, poor households and those headed by women are especially challenged as they tend to receive inequitable shares of natural capital. Given the importance assigned to governance by the Sustainable Livelihoods Framework, the next section addresses the question: Have environmental governance structures and processes been successful in mitigating the loss of natural capital and in promoting sustainable rural livelihoods?

3.4 Transforming Structures and Processes

3.4.1 Environmental Governance Structures

According to DFID, governance structures are “...the organizations – both private and public – that set and implement policy and legislation, deliver services, purchase, trade and perform all manner of other functions that affect livelihoods” (1999, 2.4.1).

Structures can reside within the public sector, including legislative, executive, and judicial bodies; within the business sector, including small and medium enterprises and corporations; and within civil society, including local NGOs and international organizations. The most influential governance structure in Tajikistan has always been

the national government. It negotiates international and regional governance agreements; controls national military, economic, social, and environmental policy, and permeates the local level of government through appointment of officials (UNECE, 2004, 23).

However, the international community, primarily in the form of development organizations, has, in the wake of the Tajik Civil War, played an increasingly significant governance role as well.

Current governance structures in Tajikistan were inherited from Soviet structures. After independence, the Constitution of the Soviet Republic of Tajikistan became the Constitution of the Republic of Tajikistan. Unfortunately, this means that land and water (as well as mineral resources, air, animals, plants, and other natural resources) remain the property of the state; structures for agricultural production remain highly centralized; and environmental protection is not a priority. It was not until 1989 that Soviet planners thought it prudent to establish the State Committee for Environmental Protection to promote sustainable natural resource management (Resource Laboratory for Nature Protection (RLNP) and UNEP, 2003).

In 1994, the Committee became the Ministry of Nature Protection with responsibilities to

[1] provide overall environmental protection management; [2] develop and implement state policies on nature protection; [3] provide state control on land use... land conservation, water resources, atmospheric air, flora, fauna, forest resources, and common minerals; and [4] prepare national programs on environmental conservation and rational use of natural resources (RLNP and UNEP, 2003).

In order to assist the Ministry with these tasks, a Research Laboratory for Nature Protection (RLNP) was also established. It is staffed by over 20 scientists who collect

and access environmental information in Tajikistan. The State Hydro-Meteorological Agency, made up of a permanent staff of national experts and consultants, also works within the Ministry. The mandate and support structures of the Ministry of Nature Protection seem well positioned to engage in good environmental governance.

As of a presidential decree in 2004, the Ministry's name changed to the State Committee for Environmental Protection and Forestry (SCEPF). A central administrative staff of 74 persons is planned, in addition to an expansion of mandate, as compared to the former Ministry (UNECE, 2004, 23). Specifically, the SCEPF is mandated to work with and between Ministries in order to coordinate environmental activities. To date, in part due to the absence of such coordination historically, the SCEPF has failed to engage any ministries in collaborative work (Ibid, 24). However, there have been limited collaborative efforts between the Committee's local offices and oblast governors' offices (Ibid, 24). The Committee's structure is illustrated below.

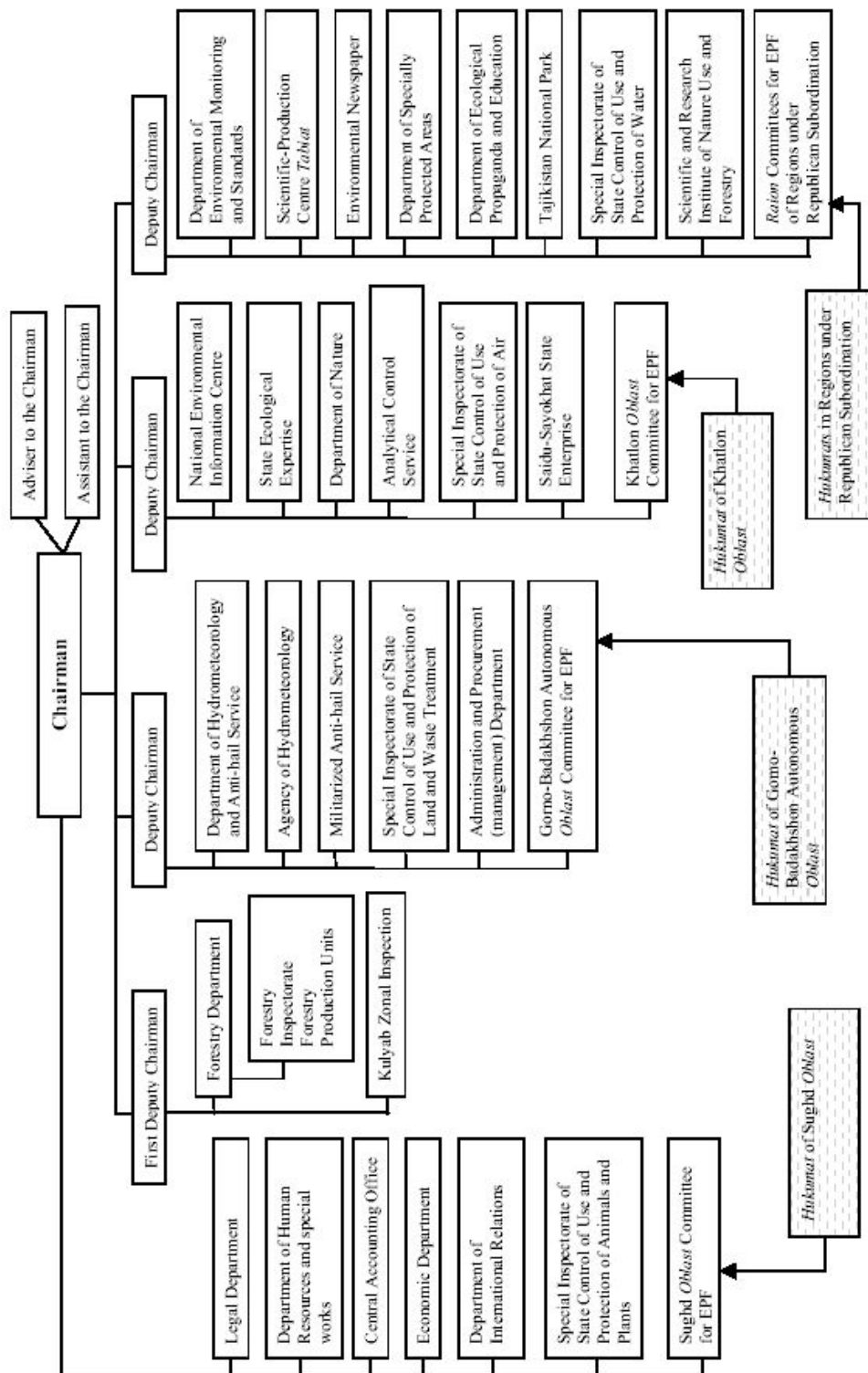


Fig. 3.v, Structure of the State Committee for Environmental Protection and Forestry
(UNECE, 2004, 25)

A number of other ministries and committees constitute the remainder of environmental governance structures in Tajikistan. The Ministries of Land Reclamation and Water Resources, Agriculture, and Public Health; the State Committee for Land Administration; the State Forestry Authority; and the State Mining Inspectorate are the most notable structures. The first two Ministries are particularly influential though rarely interact with the SCEPF over such key issues as water management. In fact, there is competition over water allocation, "...resulting in a failure to share data and a lack of coordination in decision-making" (UNECE, 2004, 27). In order to facilitate the efficient flow of information between such entities, the Interdepartmental Coordination Committee on Ecological Statistics was established in 2002 (RLNP and UNEP, 2003). The State Committee for Land Administration, established in 2001, also plays an important role, as it is responsible for developing land use policy and conducting land reform (UNECE, 2004, 27).

Local environmental governance is carried out by local councils and *mahalla*, or neighborhood, groups. The former is authorized to regulate enterprises within its jurisdiction in terms of environmental standards and resource use. When enterprises are found to be in violation of a regulation, the local council may suspend its activities. *Mahalla* groups are empowered to monitor the use of land, water, and other resources within their respective neighborhoods, though they may not sanction offenders. Sanctions would be imposed through the local councils (Ibid, 28). Given the above structures, the next sub-section analyzes attendant governance processes.

3.4.2 *Environmental Governance Processes*

What environmental governance processes have been set in motion by national, international, and local structures? According to DFID, governance processes “...determine the way in which structures – and individuals – operate and interact” (1999, 2.4.2). Processes include policies, legislation, institutions, culture, and power relationships. One such piece of legislation is Article 36 of the Constitution, which declares that “...the state guarantees the right of a citizen for a favorable environment” (Qtd in RLNP and UNEP, 2003). This article could be understood as the foundation for environmental governance in Tajikistan, but it remains very vague, failing to define “favorable” and not citing any enforcement mechanisms.

There is only weak evidence of national governance structures in Tajikistan engendering effective processes for environmental governance. One of the most significant obstacles faced by the government, of course, was the Civil War. In spite of this formidable obstacle, it is reported that the former Ministry for Nature Protection “...implemented a number of national and local nature protection projects as well as regulatory documents” (RLNP and UNEP, 2003). The workshops that were organized included specialists, as well as the public, and issues such as water conservation, land management, biodiversity protection, erosion, waste management, and air pollution were discussed.

Beyond discussion, ministerial and committee activities have resulted in the creation of three nature parks, limited environmental education, and legislation, including national action plans for three global environmental conventions. (RLNP and UNEP, 2003). As

of 2003, however, the former Ministry of Nature Protection had only developed two pieces of legislation: a directive document entitled *Methodological instructions on charging payments for environmental pollution* (1993 and amended in 2001) and a regulatory decree *On State and local special funds for nature protection* (1998). In addition to this limited output, the Ministry supported other legislation related to the environment, as indicated below. (See Annex for a complete list of environment-related legislation in Tajikistan).

Broader legislation related to environmental protection came in two phases: following independence and during and following the 1999-2001 drought. The legislation that was written after the drought was apt, including a *Water Code* and a *Law on Energy* in 2000; *Hydro-meteorological Activities* and *Energy Saving* laws in 2002; and a law on *Ecological Expertise* in 2003 (RLNP and UNEP, 2003). The latter allows environmental impact assessments (EIA) to be carried out by the SCEPF and by those individuals licensed by the Committee to do so. Unfortunately, capacity at the local level remains very low and few violators have been fined, much less paid the fine (UNECE, 2004, 32-35). The law on *Nature Protection* is older, dating from 1994, in addition to the 1996 *Land, Forest, and Administrative* codes. These tend to be in keeping with Soviet policies of exploitation of natural resources, centralization, and state ownership.

Though more environmentally conscious, even recent legislation is weak, given that “...measures preventing the violation of environmental legislation are *envisaged*” (RLNP and UNEP, 2003, author’s italics). However, some further acts to support

implementation have been approved. Three examples concern assigning responsibility for water law violations and the illegal hunting of animals, as well as initiating permanent environmental education. Ultimately however, UNDP reports that laws from the former Ministry for Nature Protection “...lack... section[s] and articles on protection of vegetation and use of lands...” (UNDP, 2005), both essential considerations for rural livelihoods.

Two nation-wide pieces of legislation, the *State Environmental Program* (SEP) and the *Poverty Reduction Strategy Paper* (PRSP) (Tajik Government, 2002), if fully implemented, would protect natural capital and support rural livelihoods. In 1998, the government adopted legislation entitled *Measures to Implement the State Environment Program*. “The Program calls for a balance to be struck between economic activity and the carrying capacity of the environment” (UNECE, 2004, 28) while carrying out practical urgent measures such as “preventing land erosion;... reforestation; expanding specially protected territories; restoring good quality of air, water, and other resources;... [and] introducing energy saving technologies into industry” (Ibid, 29). Though progress lags behind, due, in part, to a lack of funding, reforestation projects are slowly spreading in and around Dushanbe, as well as in Sugd oblast. Also, protected areas now cover 20% of Tajikistan’s territory (UNECE, 2004, 28-29).

The second piece of legislation, the PRSP, was approved by the government in 2002 (Tajik Government, 2002). It focuses on the creation of new jobs and on developing the country’s energy, transport, water supply, and communication infrastructure, all of which

could bode well for natural capital and rural livelihoods. Furthermore, the PRSP recognizes that “natural disasters, water pollution, soil erosion and desertification have a serious impact on the poor” (UNECE, 2004, 18). Environmental concerns are most concretely addressed through reforms to the agricultural sector, including land reform; elimination of cotton quotas; provision for competition among agricultural input businesses; and the promotion of small and medium enterprises to engage in agricultural products processing. Implementation of the PRSP is coordinated through the PRSP Monitoring Department, which is supported by an Advisory Committee. The latter is headed by the President’s Economic Policy Advisor and is comprised of representatives from the Monitoring Department, international organizations and NGOs, local NGOs, and the Ministry of Finance (Ibid). The PRSP formed the basis of the government’s 2004-2006 public investments, though it was only able to provide \$125 million of the required \$690 million from its own budget (Ibid). The remainder will have to come from international donors.

The PRSP, however, in the four years since it was approved by the government, has not succeeded in reforming the agricultural sector. In fact, the cotton export industry remains unethical in that it benefits state and local officials, cotton magnates, and futures companies, at the expense of farmers and laborers. The state still sets high quotas for cotton and officially earns a 10% sales tax on it (ICG, 2005b, 7), though corruption means that the police, inspectors, and other officials regularly extort additional bribes or “fees.” At 30% of the export earnings (WB, 2005, 19), cotton is Tajikistan’s most lucrative product. As monopsonistic enterprises, cotton magnates profit handsomely,

while farmers lose out due to slow cotton gin machinery and poor storage conditions. Futures companies, who provide inputs such as seeds, fertilizers, and tools in exchange for compensation at harvest time, are driving thousands of farming families into debt by overvaluing their inputs and undervaluing the cotton output. This debt is turned over from year to year and grows beyond the family's capacity to pay it back (Ibid). As of September 2005, the total cotton debt was estimated to have reached \$220 million (WB in Oxfam, 2006a, 4). Lack of access to credit and financial services, as well as competitive sources of inputs, precludes farming families from extricating themselves from poverty.

The judicial system is also susceptible to corruption and generally supports the interests of the state and private cotton magnates. These institutions have ample resources to bribe judges, who generally have low salaries. Furthermore, farmers rarely know their legal rights and do not have the resources or the time to bring a land tenure case to court and win (ICG, 2005b, 15). Indeed, private land ownership would increase farming family's natural capital and livelihood security. Unfortunately, governance structures and processes have, thus far, failed in securing such rights, access, and control for rural households.

Beyond the very limited progress in environmental governance initiated from within the national government, global environmental conventions have generated activity.

Tajikistan received a great deal of attention from the international community, especially the UN Security Council, leading up to the 1997 Peace Accords. It is no coincidence that Tajikistan signed numerous international declarations and conventions at that same

historical moment. The government correctly realized that recognition and financial support could come through ratification of international law. By 2003, Tajikistan had ratified at least 9 international environmental conventions.

As is made evident in the *Report and Action Plan on Building National Capacity to Implement Commitments of the Republic of Tajikistan on Global Environmental Conventions*, Tajikistan focuses primarily on three regimes: the *UN Convention on Biological Diversity* (UNCBD), the *UN Convention to Combat Desertification* (UNCCD), and the *UN Framework Convention on Climate Change* (UNFCCC) (UNDP, 2005). The first two were ratified in 1997 and the third in 1998. After the ratification of these environmental conventions, however, it took six years for National Action Plans (NAPs) to emerge. Again, it is quite possible that the droughts in 1999-2001 provided the impetus for these efforts.

Two years after the NAPs were written, an assessment on progress highlighted the need for national capacity building. This assessment is perhaps the most valuable environmental governance document yet produced within Tajikistan. In an effort to comply with the three conventions and, of course, secure financial and technical assistance, the report is very frank about the seriousness of environmental degradation; the lack of environmental experts; the paucity of high quality environmental and technical education; the lack of accurate and accessible environmental information; the ineffectiveness of current legislation; and the dire need for national capacity building in environmental governance (UNDP, 2005). In Chapter 4, I return to these obstacles.

Significantly, Tajikistan also ratified the *Aarhus Convention on Access to Information, Public Participation in Decision-Making Processes, and Justice in Environmental Matters* in 2001, which represents an essential component of effective environmental governance. The OSCE conducted two regional workshops on this convention in 2004, stressing public involvement in what have traditionally been governmental decision-making processes (2006). Unfortunately, it is reported that “The general public, including NGOs, does not currently have any role in the legislative process, except for the extremely rare occasions when one of the State bodies may decide at its own initiative to seek public opinion on the draft [legislation]” (UNECE, 2004, 31). The principles embedded in the Aarhus Convention are emphasized in the Normative Governance Framework for Environmental Security (Stucker et al, 2006) in Chapter 4 on strategy.

Though limited initiatives have been undertaken, environmental governance structures and processes have, thus far, failed in protecting and managing natural capital for the benefit of rural households. In spite of the efforts of international organizations to promote environmental governance, some of the national government’s policies have resulted in further depleting and degrading natural capital, especially land and water. Though the national government is best positioned to improve the rural vulnerability context, it has not chosen to do so. In fact, natural capital loss and a compromised vulnerability context have resulted in unsustainable, illegal, and dangerous livelihood strategies among pastoral and farming communities. These are explored next.

3.5 Livelihood Strategies and Outcomes

What livelihood strategies and outcomes have emerged among the rural Tajik population? DFID defines livelihood strategies as “...the range and combination of activities and choices that people make or undertake in order to achieve their livelihood goals” (1999, 2.5). It is important to note that livelihood goals are not to be imposed by outsiders, but rather defined by individuals and households. The attendant livelihood outcomes vary, but are generally considered to include increased income, wellbeing, and food security; reduced vulnerability; and more sustainable use of the resource base (Ibid, 2.6). Various factors play a role in determining what livelihood strategies are available to and subsequently chosen by rural households.

Are the livelihood strategies chosen by farming and pastoral households in Tajikistan sustainable? This analysis has focused on the importance of natural capital to rural livelihoods, in addition to the governance structures that mediate its protection, access, control, and management. Indeed, the importance of natural capital is re-emphasized in DFID’s definition of sustainable livelihoods:

Livelihoods are sustainable when they [1] are resilient in the face of external shocks; [2] are not dependent on external support; [3] *maintain the long-term productivity of natural resources*; and [4] do not undermine the livelihoods, or compromise the livelihood options open to others (DFID, 1999, 1.4, author’s italics).

One approach, then, to assessing whether or not the above environmental governance structures and processes have been effective is to examine livelihood strategies in terms

of their sustainability, with a special focus on natural capital protection, access, control, and management.

3.5.1 Sustainable Rural Livelihood Strategies

As we have seen, the vulnerability context within which rural households must try to sustain their livelihoods is tenuous. Unemployment is very high, while poverty, debt, gender inequities, malnutrition, and disease limit livelihood options (Mercy Corps, 2003 in ICG, 2003). Households usually contend with these challenges by diversifying their livelihood strategies, including crop production, livestock holding, and non-agricultural forms of income.

In spite of obstacles, a few agricultural livelihood strategies chosen by rural households are sustainable or are working for positive change. For example, households depend more and more on homegardens and livestock to provide sustenance. UNDP reported that, overall, 92% of rural households have homegardens, which produce 45% of the family's food needs at higher yields than collective farms (UNDP, 1999). Family-cultivated farms, on average, produce 2,030 kg/ha, while other farms produce somewhat less, 1,890 kg/ha (UNECE, 2004, 19). For these reasons, the privatization of land is of the utmost importance. Livestock is a flexible form of natural capital in that it can provide milk or eggs, or be slaughtered, sold, or traded in times of need. Another strategy is collecting dried cotton stalks after the harvest for fuel or sale at market. Though this practice should in no way substitute for appropriate wages, it has contributed

to the slow return of trees to the edges of fields in cotton growing areas. The impact on soil fertility, if any, of removing the cotton stalks has not yet been studied.

Some individuals have become active in civil society organizations that seek to improve the rural context, especially the position of women. Civil society NGOs, with the support of international development organizations, are forming to redress some of the shortcomings of the government. Both women and men are involved in these initiatives, with the former constituting 35% of NGO directors (Falkingham and ADB, 2000, 28). Under the coordination of the Women in Development (WID) Bureau, approximately 54 gender-related NGOs have been established and remain active (Ibid). Such NGOs work to provide vocational training on alternatives to subsistence livelihoods; improvement of healthcare access, quality, and education for rural women; and mitigation of violence against women and provision of counseling support to those who have suffered abuse. Furthermore, women have engaged in human rights activism and journalism, especially seeking an end to child labor and adherence to the *UN Convention on the Rights of the Child* (UNCRC), which Tajikistan has ratified. NGO's are also active in common pool resource management, especially of water basins; small farmers' and businessperson's unions; education; and environmental protection (Putnam and Mukhamadiev, 2006b). Such activities represent environmental governance initiatives within local civil society and must be encouraged.

3.5.2 *Unsustainable Rural Livelihood Strategies and Livelihood Outcomes*

Unfortunately, unsustainable strategies far outnumber sustainable ones. These directly impact the livelihood assets available to rural households, and indirectly affect the rural vulnerability context.

For the many rural farmers who labor on state farms, the income is inadequate or nonexistent, especially for women. The average monthly salary in Tajikistan is \$7 per month, or only \$0.23 per day (ICG, 2003c), well below the poverty line of \$1 per day. While cash income makes up only a portion of rural households' total income, this is still an unacceptable sum. Furthermore, according to a survey conducted by a local NGO, 17% of women surveyed in Khatlon had received less than the minimum wage of \$1.67 per month for laboring in the cotton fields (Sitara and *Zan va Zamin*, 2003). In fact, 22% had received no pay at all and others had had to endure waits of up to six months (Ibid).

Migration, though it provides remittances to some rural households, is, upon closer analysis, an unsustainable livelihood strategy in the Tajik context that is more indicative of poverty than a relief to it. Migration has many forms and has been a livelihood option for rural households for millennia. In present-day Tajikistan, shuttle, seasonal, and permanent migration are the most common forms. While shuttle migration has the potential of becoming a sustainable livelihood strategy, seasonal and permanent migration, in their present forms, are unsustainable. Migration may decrease the likelihood of conflict in the short-term, but certain forms of it are also setting unsustainable trends in motion.

Shuttle migration is perhaps the most viable form of migration practiced in Tajikistan today. It is complicated, however, by arduous and costly border crossings; poor transportation, lodging, and sanitation infrastructure; and general lack of security, especially for the many women involved. Women, in particular, have engaged in cross-border shuttle trading of both legal goods and illegal drugs (UNOCHA, 2004). The latter, of course, is dangerous, but women generally find it easier than men to courier drugs as “mules,” either swallowing packets of opium or hiding it on their children (Ibid). Following terrorist activity in Samarkand and Tashkent in 2004, Uzbekistan, once an accessible trading partner, has essentially closed its border to Tajiks. Legal trade with Afghanistan is on the rise, but access to China would require expensive transportation infrastructure construction over the Pamir mountain passes in GBAO. Though additional infrastructure and institutions would be required, Pakistan could also become a very valuable conduit for trade, especially through its international port at Karachi (Putnam and Mukhamadiev, 2006a).

Seasonal and permanent migration provide valuable remittances to some rural households at the micro level, but appear to be unsustainable livelihood strategies when analyzed at the macro level. By volume of people, seasonal and permanent migration, especially to Russia, is the greatest. Approximately 1 million men migrate each year, mostly as construction laborers and market vendors, and 10% of them, or 100,000 people, remain abroad indefinitely (WHH, 2006). The following table, detailing the migration destinations of men and women from GBAO, is representative of these trends. Those women and men who have migrated in the past 5 years can be considered “permanent

migrants.” And, aside from the 10% of individuals likely to remain abroad, those who migrated in the past 12 months can be considered “seasonal migrants.”

Pattern of migration	Sex	leaving	Of which going to:		
		As % adults	Badakhshan	Tajikistan	CIS
Left last 12 months	Men	12%	4%	17%	80%
	Women	3%	0%	50%	47%
Left last five years	Men	11%	4%	10%	86%
	women	2%	3%	73%	23%

Fig. 3.w, Destination of Migrants from GBAO by Sex (MSDSP, 2004, 21)

According to this survey, approximately 23% of GBAO’s adult men and 5% of its adult women were engaged in migrating. The largest group of women, 3% of the adult population, had migrated within Tajikistan, while the greatest number of men, 19% of the adult population, had migrated to another country within the CIS, or former Soviet Union. Significantly, approximately 2% of the adult female population had also migrated with the former Soviet Union, while very few men or women had migrated locally within GBAO.

Such migration, by decreasing the numbers of unemployed young men in Tajikistan and supplementing family’s income with remittances, is often viewed as a mitigating factor of conflict (Cincotta et al, 2003). However, in the case of Tajikistan, migration appears to be a short-term solution that actually exacerbates problematic, long-term trends. A 2002 survey revealed that 17.2% of households had family members who had held jobs abroad within the preceding year (ADB, 2002 qtd in UNECE, 2004, 13), and remittances from

abroad account for at least 40% of Tajik GDP (Economist Intelligence Unit qtd in *ibid*). However, it is also true that many migrants are treated with discrimination and contempt in Russia, receiving lower than average wages (EurasiaNet, 2006). In fact, various incidents have resulted in the deaths of Tajik labor migrants.²² Significantly, those that choose to remain abroad are generally the most highly educated and least conservative (UNECE, 2004, 13), leaving Tajikistan sapped of human capital. In a country of just over 6 million people, the loss of 100,000 educated and skilled individuals each year is more likely to perpetuate than mitigate rural poverty. Migration of men increases the numbers of female-headed households, and leaves them in a particularly vulnerable state, as discussed above. Indeed, migration is appropriately viewed as an indicator of the inaccessibility of livelihood assets and the lack of sustainable livelihood options in Tajikistan, and foreshadows further declines in human capital akin to the “brain drain” that occurred following independence.

Another unsustainable livelihood strategy is dependence on food aid. One million Tajiks, or nearly 15% of the total population, are dependent on outside sources of food aid (ICG, 2005b). Due to the 1999 to 2001 drought, cereal output in 2000 declined by almost 50% from the preceding year, down to 236,000 tons, which was only enough to feed the population for 3 months (FAO, 2000). Tajikistan was not prepared to import a sufficient amount of grains to provide for its peoples’ needs until the next harvest. The food aid was not enough to make up the remainder, resulting in malnutrition and food insecurity

²² In Moscow in early 2006, 7 Tajik vendors were among 68 killed when the Basmanny Market roof collapsed; 6 were killed at a vegetable warehouse when their trailer, which had allegedly been locked from the outside by their employer, burned; 4 more were killed at a construction site in a similar incident; and a Tajik citizen, identified as Iskandar Saidov, was allegedly beaten to death by a police officer (EurasiaNet, 2006).

that continues to this day. Furthermore, one can argue that food aid is essentially subsidizing the cotton sector. If cotton crops were converted into wheat, Tajikistan could feed itself. This might also decrease the widespread prevalence of child labor during the cotton harvest, another harmful livelihood strategy.



Photo 3.b, Girl Harvesting Cotton in Khatlon Oblast (Grinner, Julia for Oxfam, 2006a)

Though officially condemned by the government, child labor, especially in the cotton sector, is still widely practiced (Oxfam, 2006a). Child labor in the cotton harvest is a seasonal phenomenon that occurs over a period of 4 to 5 months starting at the beginning of each school year. Based on a survey conducted by Oxfam in Khatlon oblast, children miss up to 380 academic hours, or one third, of their school year (Ibid, 1). Such lack of education is an obvious blow to human and social capital among the rural population, and perpetuates poverty. Children generally start working at 12 years of age, though some are as young as 7 (Ibid, 2), and many remain working in cotton fields for the rest of their

adult lives. The Oxfam survey determined that girls outnumber boys, therefore depriving them disproportionately of an education and future livelihood options.



Photo 3.c, Boy Carrying Cotton Stalks in Khatlon Oblast (Faroughi, Payom for Oxfam, 2006a)

Furthermore, children are not provided with a uniform, equipment, or food while working. Children also do not have access to medical facilities, resulting in high rates of influenza, diarrhea, pyelonephritis, and tuberculosis (Ibid, 2). Of those parents surveyed in Khatlon, 70% indicated that their children's health suffers due to the hardships associated with harvesting cotton (Ibid, 1). According to IOM, children harvest approximately 40% of Tajikistan's cotton (IOM in Ibid, 1), but only receive a pittance for their efforts. On average, one child harvests over 500 kg of cotton each season. While the meager rate of \$0.03/kg would amount to less than \$16 for months of toil, children receive, at best, half that amount after deductions for taxes and transportation costs (Ibid,

2). Some children are paid nothing, being compensated instead with permission to collect dried cotton stalks (Ibid, 2).

Human trafficking and prostitution are further poignant examples of unsustainable livelihood strategies and social conflict. Rural women, already in desperate straits, are all too willing to trust acquaintances who promise them legitimate work abroad. To their detriment, women are often trafficked to Russia or the Gulf States as domestic servants or prostitutes. Gulia, a 23-year-old from Tajikistan, recounts, “My acquaintance promised me a good job in a shop abroad. Instead, I was forced to service 15 to 20 men per night in a brothel in Dubai. I don’t trust anybody anymore” (Qtd in IOM, 2001). While precise data are difficult to collect on the trafficking of women and children, the latter are also being abducted and sexually exploited (Ibid). Drug abuse and crime are linked to the sex industry.

Drug production, trafficking, and abuse are additional illegal, harmful, and unsustainable livelihood strategies. In 2003, the harvest from 1 ha of wheat earned a rural family approximately \$222, while the same sized plot, cultivated with opium poppies, earned other families \$12,700 each (Gerstle, 2004). It is no wonder, therefore, that poppy cultivation continues to spread. As noted above, women find it easier to pass through border posts and are thus frequently used as drug couriers (UNECE, 2004). Beyond being an illegal livelihood strategy, intravenous drug use and attendant HIV/AIDS infections are also on the rise. There are an estimated 55,000 intravenous drug users in Tajikistan, a number that is projected to increase by 10,000 each year (Azamjon Mirzoev,

Director of Republican AIDS Center in UNOCHA, 2006b). There is also a strong link between the drug trade and conflict. During the Civil War, money from drug trafficking was used to finance the activities of most, if not all, groups (see Azamova, 2001; Makarenko, 2000; and Rashid, 2000d).

Whether or not violent conflict is viewed as a desperate and futile measure or as a prerequisite for meaningful change in Tajikistan, it is highly dangerous for combatants and non-combatants alike. Given the vulnerability context described in section 3.2, however, members of Tajikistan's large youth population are susceptible to accepting the US dollars offered by militant Islamic groups in exchange for their allegiance. Young women and men, as well as adults, who are not recruited by militant Islamic groups, might still support their activities out of fear or desperation. Others might join political or regional groups that express their grievances to the government in the form of protest and, possibly, violence. The loss of natural capital and livelihood security, though certainly not the only contributing factors, increases the likelihood of people expressing their grievances through violence.

3.6 Summary and Need for Capacity Strengthening of Environmental Governance

This sustainable livelihoods analysis of the rural Tajik context has revealed that, in response to this paper's research question, that decreases in natural capital among rural households has, in fact, had a negative impact on livelihoods, precipitated social conflict, and increased the chances for violent conflict. In section 3.2, the analysis identified the

main shocks, trends, and seasonal cycles that constitute the rural vulnerability context, including abrupt independence from the Soviet Union, the Civil War, drought, earthquakes, population growth, the youth bulge, gender inequity, floods, and mudslides. In section 3.3, it was shown that pastoral and farming households generally strive to achieve a diverse and balanced income mix, including livestock holding, crop production, and non-agricultural sources of income. Furthermore, the most important natural capital holdings of rural households were identified as being fertile land, clean water, and healthy livestock. These were recognized as being scarce and inequitably distributed, negatively affecting, in particular, the poorest households and those headed by women. Processes of natural capital loss, such as deforestation, overgrazing, erosion, lack of veterinary services, deteriorating irrigation infrastructure, salinization, desertification, and an inequitable land tenure regime, were identified as compromising rural livelihood options. Then, in section 3.4, the structures and processes of environmental governance were analyzed and found to be lacking. The national government, which currently possesses the greatest share of governance power, was seen to have failed in protecting natural capital and, thereby, in supporting rural households. In fact, it was proposed that the government, in many ways, is a threat to natural capital and the rural population. Finally, livelihood strategies were analyzed in section 3.5 and, with the exception of some promising local civil society initiatives, found to be overwhelmingly unsustainable. Lack of living wages; certain forms of migration; dependence on food aid; child labor; trafficking and abuse of drugs; human trafficking and prostitution; and joining militant groups were all considered unsustainable, and often illegal and dangerous, livelihood strategies. When individuals have no better alternatives than these dangerous livelihood

strategies, the situation is indeed desperate and violent conflict could reemerge in Tajikistan.

The dire situation in Tajikistan can not continue for long without being met by further repression or a popular uprising. If these scenarios should be avoided, it is incumbent upon us to turn our attention to strategies for strengthening environmental governance capacity in an effort to support sustainable rural livelihoods and peace.

Chapter 4 Strategy to Strengthen Environmental Governance in Tajikistan

This chapter returns to the strategy question posed at the beginning of this paper: How can capacity for environmental governance be strengthened to (1) ensure protection of, equitable access to, and sustainable management of natural capital, (2) support rural livelihoods, and (3) promote peace in Tajikistan? In order to adequately address this question, a framework is introduced (4.1) that provides the conceptual basis for my strategy recommendations (4.2). Thereafter, a table detailing specific obstacles that this strategy will have to surmount, as well as related policy options for doing so, is presented (4.3) before the overall feasibility of the strategy is analyzed (4.4). It should be noted that strategy and policy recommendations are best formulated in participatory collaboration with, or exclusively by, citizens of Tajikistan. Lacking this possibility at present, this chapter could be viewed as being too prescriptive in nature. While the feasibility of the policy recommendations are considered, they are offered as possible options in the spirit of goodwill.

4.1 Normative Governance Framework for Environmental Security

The following framework is intended to provide the conceptual basis for the formulation of multisectoral environmental governance strategies (Stucker et al, 2006). It has parallels with the Sustainable Livelihoods Framework, but shifts the focus to governance structures, processes, and especially assets. It represents the interactions, both positive and negative, between the public, private, and civil society sectors in terms of their overall impact on the environmental and societal contexts. In all cases, institutional

policies and activities are informed by governance assets. As the framework emphasizes, these assets include, but are not limited to, values, power, legitimacy, decision-making, accountability, knowledge, leadership, organizational capacity, and financing.

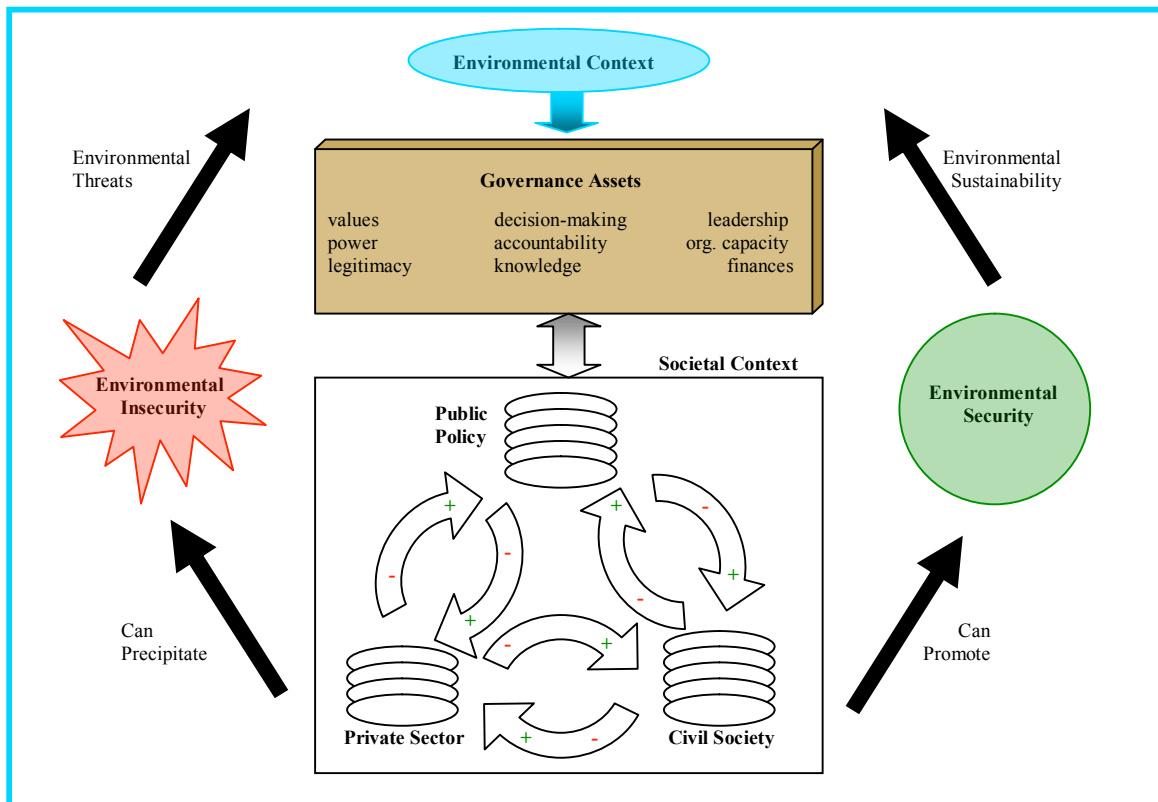


Fig. 4.a, Normative Governance Framework for Environmental Security (Stucker et al. 2006)

Depending on the combination, degree, and normative manner in which governance assets are applied, activities and policies may promote environmental security or insecurity. When values such as greed, self-aggrandizement, or illegitimate power are embraced, environmental insecurity is more likely to result. Furthermore, limited public participation in decision-making processes and authoritarian leadership, as well as

secrecy and corruption can have negative effects. If accurate data is not freely disseminated; an inefficient bureaucracy is in place; and there is limited access to financial resources, environmental regulations and enforcement are likely to be ineffective.

On the other hand, valuing sustainable development, participatory decision-making, and gender equity can promote environmental security. Participation in decision-making should be inclusive and representative, while government, business, and civil society institutions should be held accountable for their activities. Visionary leadership, high human capacity, and organizational efficiency can promote the creation and sharing of scientific and social data. The latter, along with adequate funding, can promote sound regulations and fair enforcement, ultimately leading toward environmental security and peace. Clearly, one of the most important entry points for environmental security strategies is strengthening, informing, and guiding governance assets.

One positive example of the Tajik government soliciting information from the public also indicates the importance of natural capital to the quality of life. In collaboration with the Asian Development Bank, the State Statistical Committee conducted a survey of 6,000 households on their priorities for improving living conditions (ADB and SSC, 2002). Unfortunately, the data is not disaggregated by sex, socio-economic status, rural and urban population, or age. The following table displays the percentage of households who indicated that the listed priority issue was “very important,” while others answered “important,” “not important,” or “indifferent.”

Priorities		Total (%)
1	Water supply	69.2
2	Job creation	67.6
3	Food aid	64.5
4	Road improvements	58.0
5	Power supply	56.7
6	Anti-drugs policy	53.5
7	Public transport	51.4
8	Anti-corruption policy	47.5
9	Security	44.4
10	Housing construction	43.8
11	Hospitals	42.2
12	Vaccinations	39.1
13	Training	37.4
14	Primary schools	33.5
15	Family planning	33.3
16	Waste management	26.8
17	Public administration reforms	24.3
18	Access to fertilizers	19.9

Fig. 4.b, “Very Important” Household Priorities for Improving Living Conditions (ADB and SSC, 2002 in UNECE, 2004, 14)

It is significant that 3 of the top 5 priorities - water supply, food aid, and power supply - are directly connected to natural capital. Had public administration reform, which was identified by nearly 1 of every 4 households as being “very important,” been subdivided to explicitly include land reform, it may have ranked even higher. Though not perfect, this type of data is essential for effective environmental governance in Tajikistan.

4.2 Strategy: Strengthening, Informing, and Guiding Governance Assets

The strategy approach for promoting effective environmental governance in Tajikistan should focus on strengthening, informing, and guiding governance assets within the public, private, and civil society sectors at both the national, as well as decentralized local levels. In this process, a shift from dependence on international donor aid should be slowly replaced with Tajikistan's active participation in new regional efforts to promote sustainable management of the environment, fair trade, and civil society in Central Asia.

Broadly, governance assets should be strengthened and promoted in all policy and activities.

- Sustainable development *values*, including participatory decision-making, and gender equity should be promoted;
- checks and balances must be developed to mediate *power* relationships from the national level through the household level;
- *legitimacy* should be strengthened through public *participation* in decision-making processes, especially elections;
- *accountability* should be strengthened through transparent governance structures and processes, and an independent media and judiciary branch of government;
- creation and dissemination of accurate environmental and social *information* through high quality public education systems, civil society initiatives, and an independent media should be widely supported; and
- visionary *leadership*, high *organizational capacity* and efficiency, and access to *financial resources* should be developed and secured.

4.3 Obstacles to Strategy and Related Policy Options

Application of this strategy for environmental governance will surely encounter significant and entrenched obstacles. These obstacles variously prevent natural capital protection, access, and management. It goes without saying that illegal and dangerous livelihood strategies must be addressed in the short term with all due haste. However, it is also essential to simultaneously address the underlying causes of unsustainable livelihood strategies with long-term policy. The latter should be addressed through collaboration between international, national, and local organizations, in the public, private, and civil society sectors. The importance of a participatory approach, gender perspective, and the devolution of centralized power should be emphasized throughout. In the following table, major obstacles and appropriate long-term policy options are presented.

Obstacles	Policy Options
National government is very authoritarian, highly centralized, widely corrupt, and based on regional power relationships.	<ul style="list-style-type: none">• Promote rule of law and public participation in decision-making processes as per the Aarhus Convention. Government must become more democratic, transparent, accountable, and decentralized.• Provide extensive capacity building for decentralization of government, especially at the local and district levels.• Strengthen judicial system by providing better salaries and protection to judges. Educate population about their rights and legal avenues to redress violations. Make courts accessible and affordable to citizens and refugees.• Ensure an independent media and easy access to reliable information for the public.
Governance structures lacking in environmental governance capacity.	<ul style="list-style-type: none">• Build capacity for environmental governance in the public, private, and civil society sectors at all levels, with an emphasis on governance assets and inter- and intra-sectoral institutional collaboration.• Initiate national and local sustainable development councils within and beyond the current SCEPF structures to form a common development vision guided by Agenda 21 (UN Department for

	<p>Sustainable Development (UNSD), 1992).</p> <ul style="list-style-type: none"> • Incorporate sustainable development values, such as those enshrined in the Earth Charter (Earth Charter Commission (ECC), 2000) into the Poverty Reduction Strategy Paper (PRSP) and State Environment Program (SEP). Implement through national sustainable development plan. • Incorporate high quality environmental education into schools and universities. • Graduate, employ, and retain both male and female environmental experts in governance institutions.
Women do not enjoy equal access to and control of resources, including decision-making structures and processes.	<ul style="list-style-type: none"> • Collect sex disaggregated data as a matter of course, and make information available to the public. • Conduct gender mainstreaming and women's empowerment at all levels, including women's rights training for men and women. • Ensure gender equality in education, including higher education, in part through scholarship programs for rural young women and girls. • Empower women to choose when and whom to marry, as well as how many children to bear. • Ensure women's access to rural healthcare clinics and hospitals, especially for reproductive education and care. • Ensure that rural agricultural extension programs achieve gender balance. • Ensure women's access to and control of natural capital, especially fertile land, water, and livestock. • Work toward greater representation of women in leadership roles in government, business, and civil society.
Land is controlled by state.	<ul style="list-style-type: none"> • Accelerate and broaden scope of land reform to include private ownership and control for people regardless of sex, wealth, social standing, ethnicity, regional origin, or sexual orientation.
Elites are benefiting from cotton monoculture.	<ul style="list-style-type: none"> • Abolish state cotton quotas; privatize and modernize gins; and diversify agriculture (as in parts of RRS). • Exert pressure on international buyers of Tajik cotton to boycott until child labor is abolished; fair trade mechanisms are established; and agricultural laborers are equitably and adequately compensated for their work.
Lack of support to agricultural livelihoods, and indebtedness of rural households.	<ul style="list-style-type: none"> • Replace futures companies with state-supported extension programs focused on sustainable agriculture. • Support the development of small- and medium-sized agricultural input producers and distributors, and allow for competition among suppliers. • Guarantee equal access of women and men to agricultural and veterinarian extension programs. • Provide debt relief and access to credit to rural households.
Lack of access to markets.	<ul style="list-style-type: none"> • Reopen comprehensive trade relations with Uzbekistan. • Continue efforts of promoting trade with Afghanistan and China through construction of bridges over the Pyanj River and roads through the Pamir Mountains. • Continue efforts to establish trade relations with Pakistan, recognizing the country's importance as a potential buyer of Tajik

	<p>hydroelectricity, and access to the international port at Karachi.</p> <ul style="list-style-type: none"> • Improve and maintain internal transportation infrastructure to enhance access to local markets.
Poor watershed management.	<ul style="list-style-type: none"> • Build capacity for local and regional participatory watershed management. • Repair irrigation infrastructure; reduce dependence on pumped water; harvest rainwater; employ more efficient irrigation technologies; and promote water conservation.
Energy supply, especially in remote mountain regions, is insufficient and unreliable, leading to compromised healthcare and deforestation.	<ul style="list-style-type: none"> • Promote use of decentralized renewable forms of energy generation, including small hydro, wind, and photo-voltaics. • Engage in reforestation programs, especially on sloped lands unsuitable for agriculture and pasturing. • Ensure that local health clinics, schools, and homes have dependable electricity sources.
Loss of traditional knowledge.	<ul style="list-style-type: none"> • Revive traditional knowledge through its documentation and dissemination, especially in pastoral communities. • Conduct pastoralist-to-pastoralist trainings involving both men and women.
Tajikistan is dependent on funding and food aid from international organizations.	<ul style="list-style-type: none"> • Build national and local capacity focused on empowerment, good governance, and sustainable food production. • Encourage the substitution of cotton with wheat and other food staples. • Actively support the development of civil society and small and medium enterprises.
Population growth and migration.	<ul style="list-style-type: none"> • Improve healthcare system so as to decrease child and mother mortality and the attendant need to bear numerous children. • Conduct family planning especially focused on young women. Ensure that they are aware of their individual rights and the benefits of having fewer children. • Provide support to migrants within Tajikistan, and those migrating to other countries in an effort to prevent out migration.
Youth bulge and high unemployment.	<ul style="list-style-type: none"> • Ensure universal education for young women and men, as well as vocational training and support in a range of alternative rural and urban livelihoods.

Fig. 4.c, Obstacles to Environmental Governance Strategy and Policy Options

This table is meant to be neither exhaustive nor prescriptive. In fact, Tajikistan, equipped with the environmental governance assets described above, must ultimately forge its own path into a sustainable future.

4.4 Feasibility of Strategy

The proposed strategy and policy options are ambitious, but, with patience and long-term commitment, feasible. Two important factors in strategy implementation and success are the role of the international community and the political will of the Tajik government. In particular, the activities of international development organizations - such as *Agence d'Aide à la Coopération Technique et au Développement* (ACTED), the AKF's MSDSP, Care, Caritas, Counterpart International, FAO, *Gesellschaft fuer Technische Zusammenarbeit* (GTZ), Mercy Corps, Merlin, OSCE, Oxfam, UNDP, and WHH – represent a combination of sustainable development values and funding. If the latter is to be expected by the government, the former must be widely embraced.

Internationally-funded sustainable development projects are already underway. The Central Asian Environment, Science, Technology, and Health (ESTH) Hub published a table of environmental projects in Tajikistan for the current year (Putnam and Mukhamadiev, 2006b). Though they caution that the list is not comprehensive, it does include over 110 projects relevant to improving environmental governance and/or rural livelihoods, totaling approximately \$591 million in investments. Tajikistan's GDP of \$1.9 billion (UNRC, 2006) is increased by nearly one third through international aid for environmental governance projects. Indeed, as an impoverished country with few resources, it is in Tajikistan's best interest to please international donors by embracing sustainable development values in the form of capacity strengthening projects in government, business, and civil society.

If financial investment is any indication of relative value, energy, agriculture, health, and water projects rank highest. Energy projects secured approximately 25% of the funding, while the remaining three secured approximately 20% each. In terms of the number of projects, health, agriculture, and water issues are receiving the most attention, as shown below.

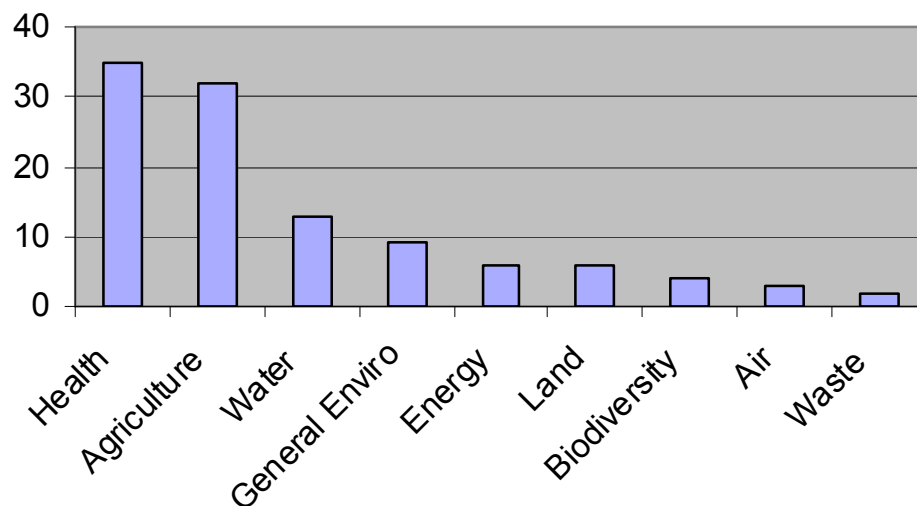


Fig. 4.d, Number of Environmental and Health Projects in Tajikistan, 2006 (Data source: Putnam and Mukhamadiev, 2006b)

Project implementation is usually conducted by UN agencies, international NGOs, and bilateral organizations. For example, UNEP and UNDP are active in a project that seeks to support implementation in Tajikistan of the Regional Environmental Action Plan for Central Asia, a project that, if successful, could enhance environmental governance at the regional level. Tajik organizations are also involved in environmental projects, representing the national government, quasi-national utility companies, civil society, and academia. Their relative level of involvement is shown below.

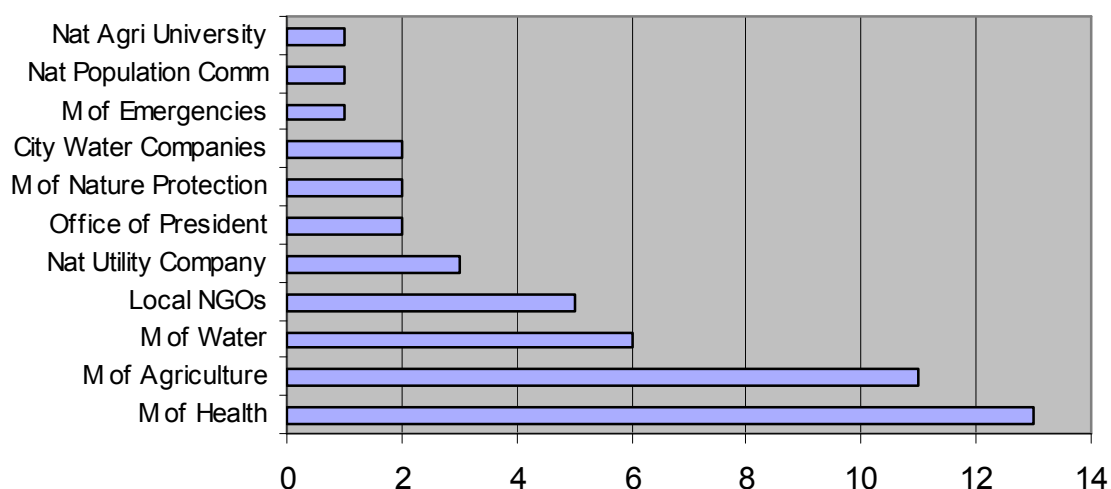


Fig. 4.e, Number of Environmental and Health Projects with Involvement of Tajik Organizations, 2006 (Data source: Putnam and Mukhamadiev, 2006b)

As this second graph indicates, the Ministries of Health, Agriculture, and Water are the most active national bodies, followed, significantly, by local NGOs. Three of the latter are health NGOs, one is a water users' association, and one is a small farmers' and businessmen's union. Overall, Tajik organizations are involved in 45 of the 110 projects, or 41%. While this is a good start, it still indicates a high level of dependence on outside agencies, not to mention the fact that all the projects are internationally funded.

For these reasons, it is possible that the above strategy and policy options could be "too successful." By this I mean that international development organizations, in their efforts

to ensure environmental security in Tajikistan, might unintentionally become permanent environmental governance institutions. It is essential that development organizations avoid creating a situation in which Tajikistan becomes irreversibly dependent upon them. Indeed, Tajikistan must take ownership of its own development and become self-sustaining in its capacity for environmental governance so that it can ensure its own environmental security and peace well into the future.

Chapter 5 Conclusion

5.1 Conclusion

By applying the Sustainable Livelihoods Framework (DFID, 1999) to rural Tajikistan, this research paper has emphasized the links between natural capital, unsustainable livelihood strategies, and conflict. In particular, gender inequities and poverty were discovered to be highly prevalent and problematic. While numerous important factors of conflict in Central Asia were reviewed, loss of natural capital and attendant deterioration of the rural vulnerability context have not previously been studied. Though a balanced combination of all livelihood assets is essential for diversifying livelihood options and ensuring satisfactory livelihood outcomes, it was shown that natural capital is of particular importance to the predominantly rural and agrarian Tajik population. This paper, therefore, asked the research question: Have decreases in natural capital among rural households had negative impacts on livelihoods and precipitated social and violent conflict in post-Civil War Tajikistan?

The analysis answered in the affirmative, noting the prevalence of social conflict and a heightened probability of violent conflict. These phenomena are based, in part, on the fact that the vast majority of rural households lack the access and control of adequate natural capital, especially land, water, and livestock. Natural capital holdings were seen to be scarce and inequitably distributed, at the expense of women and poor households. Furthermore, processes of natural capital loss are widespread and entrenched, including deforestation, poor water management, desertification, lack of a legitimate land tenure

regime, and lack of veterinary services. Such processes and scarce supplies of natural capital were shown to compromise rural livelihood options. By recognizing the preponderance of unsustainable and dangerous livelihood strategies, it became evident that environmental governance structures and processes had not succeeded in protecting natural capital and supporting rural households.

However, just as loss of natural capital was shown to be linked to poverty, social conflict, and a heightened probability of violent conflict, the protection, equitable access and control, and sustainable management of natural capital can lead to livelihood security and a heightened probability of peace. Environmental governance structures and processes, highlighted by the Sustainable Livelihoods Framework as having the potential to be “transforming” (DFID, 1999, 2.4), have the potential to protect natural capital and ameliorate the rural vulnerability context.

The need for capacity strengthening of environmental governance was emphasized and the Normative Governance Framework for Environmental Security (Stucker et al, 2006) was presented as a tool for developing an appropriate strategy. This strategy pointed out the importance of strengthening, informing, and guiding governance assets at all levels and in all sectors, including the government, business, and civil society sectors. In order for Tajikistan to move beyond its dependence on international organizations and donors it must ensure that environmental governance structures and processes are participatory, legitimate, transparent, knowledgeable, efficient, accountable, and, ultimately, self-sustaining. Though these are ambitious goals, with ample patience and persistence, they

are not only feasible, but also imperative. Tajikistan is making efforts to engage in sustainable development, but it must take on greater responsibility and full ownership of its development in order to achieve lasting security and peace.

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Annex

Environment-Related Legislation in Tajikistan (UNECE, 2004, 179-184)

- Constitution of the Republic of Tajikistan, 6 November 1994 with amendments of 26 September 1999 and 22 June 2003

Laws

- Code of Administrative Violations, No. 378, 31 August 1998
- On Air Protection, No. 228, 1 February 1996 with additions and amendments No. 498, 12 December 1997
- On Certification of Goods and Services, No. 314, 13 December 1996
- Criminal Code
- On Customs Tariffs, No. 744, 14 May 1999
- On *Dekhkan* (Farmers') Farms (On Private Farms), No. 48, 10 May 2002
- On Ecological Expertise, No. 20, 22 April 2003
- On Economic Liability of Enterprises, Institutions and Organizations for Violations in the Area of Construction and Construction Materials Industry, No. 498, 12 December 1997
- On Energy, No. 123, 10 November 2000
- On Establishment of Coefficients for Indexation of Land Tax Rates, No. 902, 11 December 1999
- Forestry Code, No. 769, 24 June 1993
- On Health Protection of Population, No. 419, 15 May 1997, with additions and amendments No. 485, 12 February 2004
- On Hydro-meteorological Activity, No. 86, 2 December 2002
- On Industrial Safety of Hazardous Industrial Objects, No. 14, 28 February 2004
- On Informatization, No. 40, 6 August 2001
- Land Code, No. 23, 13 December 1996, with additions and amendments No. 498, 12 December 1997, No. 746, 14 May 1999, No. 15, 12 May 2001, and No. 23, 29 February 2004
- On Land Administration, No. 20, 12 May 2001
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- On Land Valuation, No. 18, 12 May 2001
- On Local Self-Governance and Local Economy in the Republic of Tajikistan, No. 267, 23 February 1991
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- On Natural Monopolies, No. 525, 12 May 2001
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- On Payments for Land, No. 547, 6 March 1992
- On Plants Quarantine, No. 25, 12 May 2001
- On Privatization of State Property, No. 464, 16 May 1997

- On Production and Safe Handling of Pesticides and Agrochemicals, No. 1, 22 April 2003
- On Protection and Use of Animals, No. 989, 20 July 1994, with additions and amendments No. 223, 1 February 1996 and No. 488, 12 December 1997
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- On Protection of Consumers' Rights, No. 439, 15 May 1997
- On Public Organizations, No. 644, 23 May 1998
- On Public Petitions, No. 343, 14 December 1996
- On Quality and Safety of Food, No. 54, 10 May 2002
- On Radiation Safety, No. 42, 1 August 2003
- On Salt Iodization, No. 85, 2 December 2002
- On Ensuring Sanitary and Epidemiological Safety of the Population, No. 49, 8 December 2003
- On Specially Protected Territories, No. 39, 10 May 2002
- On Standardization, No. 333, 14 December 1996
- On State Sanitary Control, No. 87, 20 July 1994
- On State Secrets, No. 4, 22 April 2003
- Tax Code, No. 664, 12 November 1998, with additions and amendments No. 810, 30 June 1999, No. 904, 11 December 1999, No. 27, 10 May 2002, No. 3, 22 April 2003, and No. 31, 1 August 2003
- On Tourism, No. 824, 3 September 1999
- On Transport, No. 124, 10 November 2000
- On Veterinary Medicine, No. 73, 8 December 2003
- On Waste of Production and Consumption, No. 44, 10 May 2002
- Water Code, No. 34, 29 November 2000

Presidential Decrees

- On Certain Measures on Improvement of the System of State Governance, No. 1249, 19 January 2004
- On System of Central Executive Bodies of the Republic of Tajikistan, No. 853, 4 July 2003

Resolutions of the Parliament

- On Approval of Poverty Reduction Strategy Paper, No. 666, 19 June 2002

Resolutions of the Government

- On Approval of Concept on Rational Use and Protection of Water, No. 551, 1 December 2001
- On Approval of Economic Development Program of the Republic of Tajikistan for the period until 2015, No.86, 1 March 2004
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- On Approval of Procedure for Registration and Issuing of Permits for Special Water Use, No. 485, 3 December 2002
- On Approval of Procedure for State Control over Environmental Protection and Use of Natural Resources in the Republic of Tajikistan, No. 21, 24 January 1994
- On Approval of Procedure for Use of Ground Waters that are not Designated as Drinking or Medicinal Water, No. 421, 4 November 2002
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- On Approval of Regulation on State Forestry Guard of the Republic of Tajikistan, No. 134, 7 April 1999
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