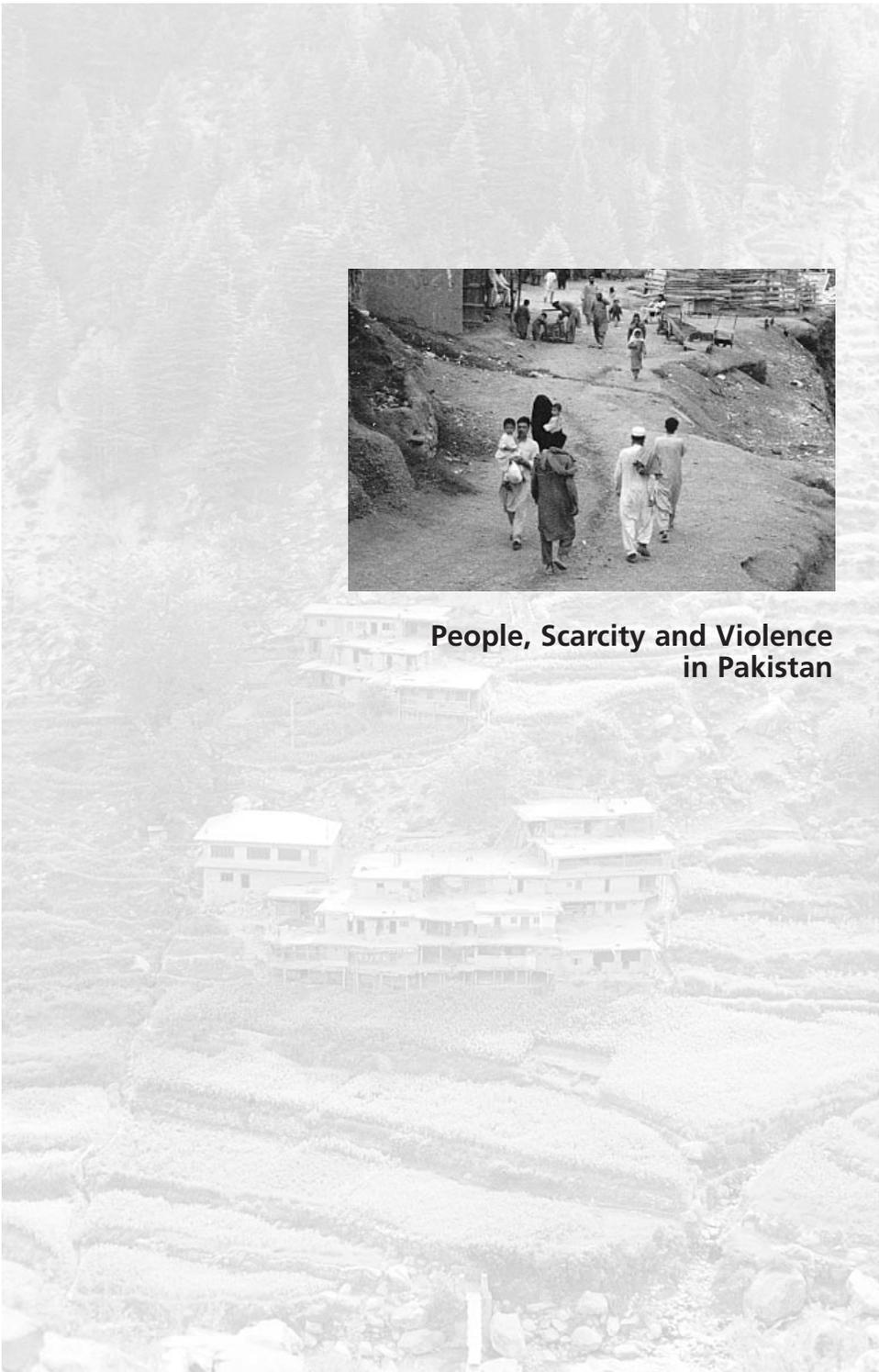




**People, Scarcity and Violence
in Pakistan**



*Photos: Inset – Refugee camp, Pakistan, Richard Matthew
Background – Terraced hillside/vulnerable housing, Richard
Matthew*

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Abstract

Interactions between environmental and social factors appear to be generating high levels of conflict and insecurity in northern Pakistan, a particularly alarming situation given the region's strategic location. Powerful forces such as poverty and population growth; recent events such as the Soviet invasion into neighbouring Afghanistan; and the persistent legacy of colonial corruption and resource exploitation have left this region highly vulnerable to certain types of social upheaval and ecological degradation. Increasingly, the latter is becoming a trigger and amplifier of the former, as livelihood insecurity stemming from poor or inequitable resource management leads to frustration, extremism and even conflict, thereby increasing environmental stress. Adaptation and stability in the region can be realized through efforts to improve environmental management, build educational and other infrastructure, establish effective conflict resolution mechanisms and address more controversial issues such as property rights, illegal livelihoods and refugees.

Introduction⁵³

In recent years, population growth, poverty, cultural diversity, religious antagonism and environmental change have become common terms in the analyses of researchers studying conflict and security issues.⁵⁴ Each of these factors can be dangerous on its own; working together they have the potential to create problems that may be unprecedented in their scope and magnitude.⁵⁵ Insofar as this is true, trends in South Asia are worrisome, and many parts of the subcontinent stand out as potential sites of violence, conflict and insecurity in the twenty-first century. Among these, for reasons to be discussed shortly, the situation in northern Pakistan is especially alarming.

In the following pages we investigate interactive environmental and social factors that appear to be generating high levels of conflict and insecurity in northern Pakistan.⁵⁶ Powerful forces such as poverty and population growth, the impact of events such as the 1979 Soviet invasion into neighbouring Afghanistan and the 2001 U.S. war on terrorism in the same area, and the persistent legacy of colonial corruption and resource exploitation have combined to render this region highly vulnerable to certain types of ecological degradation and social upheaval.⁵⁷ Increasingly, the former is becoming a trigger and amplifier of the latter. Put simply, more environmental stress can mean more violence and conflict. This, in turn, can mean more environmental stress.

In the relatively compact expanse of South Asia, which contains one-quarter of the world's population and one-third of its nuclear arsenals, the prospect of more violence and conflict is of great concern to the international community. After considering these linkages in some detail, this chapter concludes with policy suggestions for domestic and foreign parties, suggestions that underscore the potential importance of conservation measures as a force for stability and security.

The idea that environmental change may be linked, directly or indirectly, to conflict and insecurity has received an enormous amount of attention, especially in the 1990s. Building on insights from the 1987 Brundtland Report and various earlier sources, scholars throughout the world have attempted to clarify these linkages through case study and quantitative analysis.⁵⁸ Work by Thomas Homer-Dixon (1998 and 1999), Nils Petter Gleditsch (1997), Gunther Baechler (1998) and many others has been influential in policy circles, and has played a role in modifying the way scholars and others think about security. Surprisingly little attention, however, has been paid to the possibility that the equation can be reversed.

Based on field experience in Pakistan and elsewhere, our intuition is that just as environmental change can contribute to conflict, conservation

measures may contribute to peace. This is perhaps even more difficult to demonstrate than the familiar environment-conflict link, which has been the subject of significant criticism, mainly on methodological grounds. Our objective, however, is not to attempt the impossible: to prove that more aggressive conservation practices inevitably would reduce conflict in northern Pakistan and perhaps have a pacifying impact throughout South Asia. Rather, we seek to identify ways in which environmental stress complicates an already complex and tense situation, and to suggest that relieving this pressure through better resource management has a reasonable chance of being beneficial from a security perspective. In the case of northern Pakistan, where relatively scarce resources are being overwhelmed by population growth and unsustainable practices, it does not seem to us implausible that the sustainable use of natural resources and the protection of vital ecosystems would make it much easier to create or preserve robust livelihoods, thereby reducing a prominent source of violence and tension.

A Note on Case Selection

While many areas of south Asia deserve careful scholarly attention, as well as sustained conservation efforts, it is the precise mixture of negative environmental trends and tense geopolitics that sets apart Pakistan's northernmost region. Located in the heart of the planet's most dramatic confluence of mountain ranges, which are also the source of much of the subcontinent's freshwater, northern Pakistan faces environmental challenges—including severe deforestation, soil erosion, waterlogging, flooding, air pollution and water pollution—that are unprecedented in its turbulent history. It is also a region that has known much conflict over the centuries—particularly in the nineteenth and twentieth. The prospect of an environmentally related intensification of violence and conflict in the region is particularly alarming given the possibility of spillover effects into any or all of the following regions:

- an Afghanistan to the north and west that is still reeling from over two decades of invasion, war, political extremism and economic collapse;
- the conflict-prone valleys of Kashmir and Jammu to the east—disputed territories that have soured India-Pakistan relations since 1947; and
- the rest of Pakistan to the south, made up of three provinces (Baluchistan, Punjab and Sind), each of which faces serious political and economic problems and has been plagued by persistent civil unrest.⁵⁹

The situation in northern Pakistan is also of interest because it presents a problem that is a model of either evident or emerging conditions in other vulnerable and volatile regions.⁶⁰ In many of these cases, a model set of

interconnected variables—including rapid population growth, repeated economic failures and weak and ineffective institutions—are promoting practices that simultaneously damage the environment and cause the steady deterioration of sustainable livelihoods. In consequence, social systems become mired in conditions that are difficult to change and highly conducive to reproducing conditions of dire poverty, rampant infectious disease, and multiple forms of insecurity and violence.

As Pakistan enters the twenty-first century, its future, especially in the north, looks bleak to many observers.⁶¹ Solving the complex challenges it faces may require financial and technical assistance from the North, as well as internal resolve to reform corrupt political processes, bolster the economy and inch forward carefully-conceived—but generally ignored—plans for sustainable development based on Agenda 21.⁶² Success in northern Pakistan could generate valuable planning and policy models that might be adapted to help address similar problems elsewhere in the world. The social effects of failure, however, could spill across Pakistan's borders, adding to the already sizable stockpile of regional challenges and tensions.

Northern Pakistan in a Regional Context

In the weeks before and after the partitioning of South Asia in 1947, some 15 million people moved back and forth between the newly created countries of India and Pakistan. This turbulent beginning was only the first of many large-scale social and political upheavals that have affected this region over the past six decades, a pattern that several influential studies suggest is likely to continue—and perhaps intensify.

For example, the American political scientist, Samuel Huntington, writing about likely sites of future conflict around the world, argues that “[t]he great divisions among humankind and the dominating source of conflict [in the years ahead] will be cultural” (1997, page 67). He predicts that “[t]he clash of civilizations will dominate global politics” (1997, page 67). Within this paradigm, Huntington contends, south Asia stands out as one of the most vulnerable regions of the world. He worries that “[t]he historic clash between Muslim and Hindu in the subcontinent manifests itself now not only in the rivalry between Pakistan and India but also in intensifying religious strife within India between increasingly militant Hindu groups and India's substantial Muslim minority” (1997, page 77).

Norman Myers, a British scientist, offers further reasons for concern. While Myers also comments on the long-standing antagonism between Hinduism and Islam, which he believes may “be exacerbated by the fundamentalist Muslim spirit that emanates from Iran,” the focus of his analysis is environmental degradation (1993, page 103). In particular, the Himalayan water catchment, which is vital to this region, is being damaged by rapid defor-

estation. "This environmental decline is leading to agricultural setbacks, indeed to the growing incapacity of many areas to support human communities. Yet the total population of this region, more than 1.2 billion people today, is projected to approach... 2.6 billion before it finally levels out... in the next century" (1993, pages 102–103). South Asia, Myers concludes, "presents much scope for conflict" (1993, page 101).

M. V. Ramana and A. H. Nayyar, physicists as well as policy analysts who are from south Asia, believe that conflict in the region could result in unprecedented levels of destruction. Recent events are especially worrisome in this regard. In May 1998, India conducted five nuclear tests; three weeks later Pakistan responded with six nuclear detonations of its own. In 1999, a two-month long war erupted between the two countries in the long-disputed province of Kashmir, claiming over 3,000 lives. U.S. diplomatic pressure persuaded Prime Minister Nawaz Sharif to act to end the conflict. But within months Sharif was ousted in a military coup staged, in part, because of his capitulation to U.S. pressure. In the future, conflict between India and Pakistan may not be so quickly contained. This is why, according to Ramana and Nayyar, "the Indian subcontinent is the most likely place in the world for a nuclear war" (2001, page 72).

As we finalize this text in early 2002, the region is in the midst of a new period of violent turbulence. Following devastating attacks against the people of the United States on September 11, 2001, the administration of President George Bush announced that it would take all necessary measures to dismantle terrorist networks, beginning with al-Qaeda. This organization, responsible for the September attacks, had established cells in some 60 countries, including Afghanistan where, over a 10-year period, it had built an elaborate and highly visible infrastructure for training and other activities, embedded itself into the south Asian drug trade, and garnered the support of the Taliban rulers.

The U.S.-led military campaign to destroy al-Qaeda's Afghan operations and remove the Taliban from power succeeded in a matter of months. Unfortunately, the impacts of this campaign appear to have been mixed, diverse and extensive. While new opportunities for peace and reconstruction are now evident in places like Kabul, many pre-existing tensions have been reinforced and some new problems have been introduced.⁶³ For example, to escape American bombing, large numbers of Afghans fled to the border with Pakistan, straining refugee camps in the north and adding a million internally displaced people to a population that has been unsettled for over two decades. Pakistan's official support for the U.S. campaign intensified divisions within that country, thus creating enormous difficulties for President Pervez Musharraf. During this same period, India-Pakistan relations deteriorated and the prospect of war loomed large.

Meanwhile, in Afghanistan, warlords of the Northern Alliance, who have closer connections to Russia and Iran than to Pakistan and who have been deeply implicated in the south Asian drug trade, began competing for power and position as the international community worked to reconstruct a country rendered virtually dysfunctional by 23 years of warfare (Orth, 2002). In short, in early 2002 India and Afghanistan were grinding uncomfortably against northern Pakistan, defining a turbulent region that may be lurching towards catastrophe.

These three countries in turn lie on the borders of, among others: China (which may grow to become the next U.S.—or collapse like the former U.S.S.R.); Russia (whose economy and military are in shambles); Iran (whose revolutionary politics captured the world's attention throughout the 1980s and, according to some commentators, continues to inspire radicals in the region); and the newly independent states of Turkmenistan, Tajikistan and Uzbekistan (countries widely seen as disorganized, corrupt and heavily involved in the world's largest heroin trade) (Orth, 2002). Nuclear weapons, population pressures, environmental stresses, economic problems and group-identity conflicts are evident throughout this part of the world. Moreover, south Asia is comprised of a complex network of economic relationships, diverse cultures (over 50 languages are spoken in Pakistan alone) and ecosystems that cut across borders with little regard for the legal principle of sovereignty. Hence what happens in northern Pakistan happens in a tense, interconnected area, and thus may be of great importance both regionally and worldwide.

History and Geopolitics

Pakistan is, with the exception of the fertile Punjab province, a land of mountain and desert.⁶⁴ The high peaks of the Hindu Kush and the Himalayas define the northernmost part of the country. These magnificent mountain ranges give way to the fertile Peshawar Valley, irrigated by the Kabul and Indus Rivers.⁶⁵ Still further south, the northern region terminates in a series of alluvial and semi-arid plains that run on into the central provinces of Punjab and Baluchistan.⁶⁶

The 17 million people living in northern Pakistan rank quite low on human development scales (see Table B1), although pockets of great wealth exist and many government officials have advanced degrees, often from European or North American universities. Fifty per cent of the population is Pashtun; at least another six million Pashtun live across the border in Afghanistan.⁶⁷ In the words of the political leader Imran Khan, his people “are one of the world's great warrior races” (Khan, 1993, page 3).⁶⁸ Martial values shape the culture; most people are well-armed; and violence is an accepted way of restoring honor and resolving disputes (Khan, 1993, pages 1–12, 33–34).

Figure B1. Map of Pakistan



Courtesy of The General Libraries, The University of Texas at Austin.

The legacies of a colonial past weigh heavily on this region.^{69, 70} The British arrived in the late eighteenth century with hopes of creating a buffer state that would keep Russia out of Afghanistan. Britain’s “Great Game” began with the first Afghan War (1838–42) and continued for over a century.⁷¹ The British seized land and established settlements, but were not able to pacify the region. When they concluded that the Pashtun were impossible to defeat through force, they tried to divide and conquer them by acting to intensify discord among feuding Pashtun clans.

Table B1. Basic Facts about Pakistan

Category	Northern Pakistan	Pakistan
Total area (sq. km.)	74,521	803,940
Population (millions, 1998 est.)	16.5	135.1
Literacy rate	17%	36.4%
Population growth (1996 est.)	3.2%	2.1%
Per capita income (1996 est.)	US\$200	US\$470
Pop. Living in poverty (1996 est.)	20%	34%
Unemployment (1996 est.)	NA	16%
Refugees (millions, 1999 est.)	1.6	2.0
Forest cover	6–23%	5%
Grazing land	23%	6%
Arable land	19%	27%

Sources: *The New York Times Almanac* (1999); IUCN (1997 and 1998).

Unable to gain control over the Khyber Pass (a potentially lucrative trade route linking south Asia to the Middle East and Europe), the British turned their attention to cutting down the vast softwood forests of blue pine, fir and spruce that covered much of the region. Like the rest of Pakistan, the northern region was developed to provide raw materials for the infrastructure of the Raj. To this end, the British established a forestry service dedicated to logging, and a highly centralized political system propped up by bribery and military force. In the south of the region, they oversaw the construction of sprawling and inefficient irrigation systems, access to which became a vital part of the political economy of bribery that was established to facilitate colonial rule. Thanks largely to the British colonialists, deforestation and irrigation became the twin engines of environmental stress (see van Dijk and Hussein, 1994, page 35).⁷² Today, soil erosion, waterlogging and flooding are among the many serious problems whose roots can be traced to the economic practices of the colonial era (see van Dijk and Hussein, 1994, pages 34–35; IUCN, 1997, pages 31–37).

The British allowed the local *jirgas* (or councils of elders) to manage routine affairs and resolve most local conflicts, a decision that ensured the continuation of a high level of clan identity and autonomy. When the British left in 1947, northern Pashtun clans were given the choice of independence or joining the new state of Pakistan. Those in the valleys of Kashmir and Jammu elected to recover their autonomy—and immediate-

ly became the targets of Indian, Pakistani and Chinese expansion plans.⁷³ The rest formed the North-West Frontier Province (NWFP) and the Northern and Tribal Areas.

Immediately following the division of South Asia, fighting erupted in many regions, including Kashmir.⁷⁴ When the United Nations intervened and a ceasefire was established in 1949, a temporary Line of Control was recognized based on military positions at that time. The hope was that India and Pakistan (and perhaps China, which claims portions of Kashmir) would negotiate a solution to the problem through peaceful means. Unfortunately, this has not happened, and the area continues to be the site of much conflict.⁷⁵

There are many explanations for this. The area has long been perceived as being of tremendous geopolitical importance due to its location at the point of intersection of China, India and Pakistan. Over the years it has also acquired great symbolic value in both India and Pakistan. According to Eric Margolis, India regrets that Tibet was lost as a buffer state to China, and has resolved never to relinquish its hold over Kashmir (1999, 2000, pages 54–118). Pakistan appreciates the strategic and symbolic value of the region, and is also motivated by the fact that the majority of Kashmir's 11 million people are Muslims. Both sides cherish the image of Kashmir as a lush paradise. Chronic conflict, which erupted with great force in 1947, 1965, 1989–90 and 1999, has created a history of violence that has steeled the resolve of many on both sides not to budge from the goal of winning a decisive victory. Finally, after the Afghan people forced the Soviets to withdraw in 1989, some *mujahidin* brought their military skills and war fighting passion to Kashmir. Not surprisingly, members of the Indian government have accused the Pakistani military and intelligence agency of supporting these fighters, an accusation that contributed to the 1999 crisis. At that time, the U.S. pressured the government of Prime Minister Nawiz Sharif to do what it could to encourage the *mujahidin* to return to the Pakistani side of the Line of Control. Sharif complied and in October of that year, less than three months later, he was ousted from power in a military coup.

Ironically, no one is certain what would transpire if the people of Kashmir were given the freedom to decide their political future for themselves. India has been unwavering in its rejection of a referendum as the basis for resolving the conflict. While some observers predict that the Kashmiri would choose to join Pakistan, others suggest they might vote to recover their independence.⁷⁶ In spite of their strong Islamic roots, the people of Kashmir are not uniformly Islamic and they retain a powerful sense of local identity, place and history—the basis for a sense of shared fate and sovereign politics.⁷⁷

While Kashmir represents an extreme case, throughout contemporary Pakistan local identities remain very powerful and politically salient, although a sense of being Pakistani may be growing (see McCarry, 1997; also Lieven, 2002).⁷⁸ Consequently, political elites continue to rely on support from the rural areas and clans with which they are associated. Ethnic, religious, provincial and national constructions of identity are rarely harmonized except around a small handful of highly symbolic issues such as the future of Kashmir and the possession of nuclear weapons to balance India's atomic arsenal.⁷⁹ On many matters, competing identities pull Pakistanis in different directions, and the more local forces tend to be dominant.

This sense of being separate and distinctive is especially acute in the north, which is often characterized by Pakistanis themselves as a wild and remote place akin to Corsica or Sicily in Western Europe (see Khan, 1993). It is a sentiment that is reinforced by the area's political system—for, unlike the rest of Pakistan, some colonial governance structures have remained more or less intact in the region's tribal areas. The virtually omnipotent Political Agents are now selected in Islamabad rather than London, but the office continues to rule through force and bribery while leaving many matters in the hands of local elders. Political corruption is as evident throughout the region today as it was prior to 1947;⁸⁰ Civil strife and acute violence are endemic and despite the efforts of some visionary directors, the forest service has had limited success in making the transition to sustainable forestry practices.⁸¹ The lack of change in parts of this region may in some measure be due to the fact that Pakistan is 60 per cent Punjabi. Many Pashtun believe that during the first decades of Pakistan's existence, efforts to build a nation-state were focused largely on the more populous and fertile central and southern parts of the country, a process that tended to marginalize them and benefit the Punjab majority.

Recent external pressures have added another layer of difficulty to the challenge of reforming the north's colonial legacy of corruption and exploitation. In particular, following the Soviet invasion of Afghanistan in 1979, northern Pakistan became the staging ground for the first multinational *jihad* since the Middle Ages.⁸² *Mujahidin* flocked to the capital city, Peshawar, from the Middle East, Africa and Asia. The U.S. Central Intelligence Agency provided \$3 billion to support anti-Soviet forces in the province (Weaver, 2000, page 34). Virtually overnight, 3.5 million Afghan refugees crossed the border into northern Pakistan. Gradually, they were settled into 384 camps—over 200 of which were located on marginal lands in the NWFP. The refugees brought weapons, livestock and small amounts of gold, but they had precious little knowledge of how to manage the fragile resource base on which they would now depend (see Hanson, Matthew and Aziz, 2000).

Throughout the 1980s, the quantity of small arms in northern Pakistan grew enormously as the Afghan-Soviet war raged on its borders. Drug trafficking became widespread as refugees and others struggled to survive, and as holy warriors struggled to fund their resistance to the better armed Soviets (see Weaver, 2000), the Taliban, educators who ran the *madrassas*—conservative religious schools for some 600,000 Afghan refugees, Pakistani youth and visitors from the Middle East—became a significant political force, one that in the mid-1990s would gain control over most of Afghanistan.⁸³ And the natural environment of the region began to deteriorate even more rapidly than before under the added burdens placed on it.

Table B2. Key Dates in Pakistan's History

1940	Lahore Resolution calling for an independent Islamic state
1947	Independence
1951	Prime Minister Liaqat Ali Khan assassinated
1956	Proclamation of Republic; first constitution drafted
1958	Military coup
1960	First elected president
1965	India-Pakistan War
1969	Military coup
1971	India-Pakistan War; East Pakistan secedes to become Bangladesh
1973	Constitution adopted
1977	Military coup
1985	Elections
1998	Testing of five nuclear devices
1999	Fighting against India in Kashmir; military coup
2000	Government launches anti-corruption campaign
2001	U.S. war on terrorism in Afghanistan with Pakistani support

In brief, rapid population growth during a period of instability and conflict has overwhelmed political and economic arrangements that were fragile and inefficient from the outset, creating conditions in northern Pakistan that have been favourable to environmentally unsustainable practices. This volatile mix of social and ecological factors now fuels conflict and violence in this part of Pakistan, a situation that raises concerns throughout the region.

An Expanding Crisis

The model presented below is not intended to be a comprehensive mapping of all of the variables and relationships in northern Pakistan that may lead towards either, conflict and violence, on the one hand, or, on the other, cooperation and security.⁸⁴ Rather, based on information gathered through extensive interviewing and travel throughout this region in 1999, the model seeks to highlight elements that appear to be most determinative of the region's current vulnerabilities and threats to human security (see Hanson Matthew, and Aziz, 2000).

At the core of this model are reinforcing relationships among (a) unsustainable livelihoods, (b) the martial aspects of the culture, and (c) the rate and intensity of violence and insecurity. The area's growth in unsustainable livelihoods is in turn a product of external forces, population pressures, environmental stresses, and weak and corrupt institutions—variables that tend to be highly interactive. Because the variables that render people vulnerable and those that create conditions conducive to conflict and violence often reinforce each other, it is difficult for policy-makers and analysts to plot a course out of this situation without a high level of political resolve, considerable financial and technical resources, and strong local support for a range of interconnected goals.

To impart a sense of the challenges facing northern Pakistan, it is important to briefly describe each of the key variables.

External forces

External forces affect all aspects of the crisis scenario building in northern Pakistan. These include the process and institutional legacies of the period of British colonialism as well the wide-ranging effects of the Soviet invasion into neighbouring Afghanistan, and the U.S. war on terrorism. More immediately, at least in a spatial sense, Pakistan's ongoing rivalry with India over Kashmir is especially relevant because some believe that the NWFP has served as the staging ground for Pakistani involvement. The Pakistani military's response is that insurgents now come primarily from training camps in Afghanistan. It is clearly not coincidental that tensions in Kashmir have been especially great since 1989, when the Soviets were expelled from Afghanistan, and many of the *mujahidin* who had fought them remained in the area. Of course, to reach Kashmir they may well find it convenient to travel through northern Pakistan. The extent to which they are assisted, formally or informally, by Pakistanis is thus the subject of some controversy.⁸⁵

The current dire situation in Afghanistan is also significant. Many residents of northern Pakistan—including some 1.6 million refugees—have

deep cultural ties to Afghanistan, as well as important commercial links to that country (links that include drug trafficking and other illegal activities). Anecdotal evidence suggests strong ties between some Pakistani elites and the Taliban government (see, for example, Marsden, 1998, page 128). Early in 2001, the civil war in Afghanistan (between the Taliban and the Northern Alliance) escalated, while drought and cold contributed to widespread famine in the country. In the spring of that year the Taliban alienated the world community by destroying two ancient Buddhist statues. Then, on September 11 four targets were attacked in the United States, killing approximately 3,000 people, in an act of terrorism coordinated by Osama bin Laden. Because bin Laden was in Afghanistan at the time, the U.S. asked the Taliban to expel him so he could be tried for these attacks. When they refused, the U.S. launched a massive air strike. In these volatile conditions, many Afghans attempted to flee into Pakistan, a flow that both governments sought to cut off and even reverse, adding frustration and uncertainty to a profoundly desperate situation.

In early 2002, an interim government headed by the Pashtun leader Hamid Karzai was established in Afghanistan, and a variety of organizations such as the World Bank began developing plans for reconstruction. But as we write, the refugee camps remain full, fear of landmines disinclines many people to return, and the economy of Afghanistan is at a virtual standstill. Some reports suggest that bin Laden and members of al-Qaeda may have entered Pakistan illegally and found satisfactory hiding places from which to rebuild. Reasonable concerns about the rebirth of the heroin trade (which the Taliban had succeeded in reducing significantly); competition among Iran, Russia and Pakistan for influence in the region; and violent infighting among Afghan tribes all suggest that the future may be fraught with more instability and conflict. At the same time, expressions of optimism are not impossible to find, and a successful reconstruction cannot be ruled out. From our perspective, however, Afghanistan remains, in early 2002, a source of turbulence in the region.

Finally, endemic corruption, the drug trade and political extremism, (as well as allegations that some Pakistani military leaders are training and funding terrorists) are among the factors that have given the region a very negative image in the western world (Weaver, 2000). Coupled with sanctions against Pakistan for its nuclear weapons program, these factors have resulted in very little assistance or capital of any kind being available for northern Pakistan for over a decade.⁸⁶ This may change, however, if the U.S. rewards Pakistan financially for its support of the war on terrorism.

Since the Musharraf government assumed power in 1999, considerable attention has been paid to fighting corruption. Corruption, unfortunately, is an elusive term. What appears corrupt from one vantage might seem nor-

mal and even fair from another. Fighting corruption means getting consensus on definitions, targets and goals, and building a coalition that will work to those ends—two very difficult tasks. Further complicating matters, the government of Pakistan is not able, at this time, to rely on taxes to fund public policy initiatives. Instead, money comes largely through permits and concessions, which creates a situation that is very vulnerable to corruption at all levels of government. The lucrative character of the opium and heroin trade, and of other forms of illegal trade, significantly bolsters the incentives for corruption, especially at border crossings. Afghanistan, for example, has produced as much as 70 per cent of the world's heroin, worth some US\$30 billion at street level. Afghanistan relies entirely on its neighbours such as Pakistan and Iran to provide pathways to the wealthy markets of the western world, and drug traffickers are willing to pay handsomely for this service.

Not all external forces, however, are negative. A vital and innovative network of non-governmental organizations (NGOs), focused largely on environmental issues and women's rights, provides many valuable services in northern Pakistan. In particular, entities like IUCN provide a bridge to skills, information and funds available in the outside world. The Aga Khan Foundation is also highly visible in the area, empowering communities, helping with conflict resolution and promoting a variety of sustainable livelihoods. Recent studies of NGOs demonstrate that they can be very successful in providing information, adding leverage to community efforts and pressuring governments at all levels to be accountable for their actions and sensitive to the needs of their constituents.

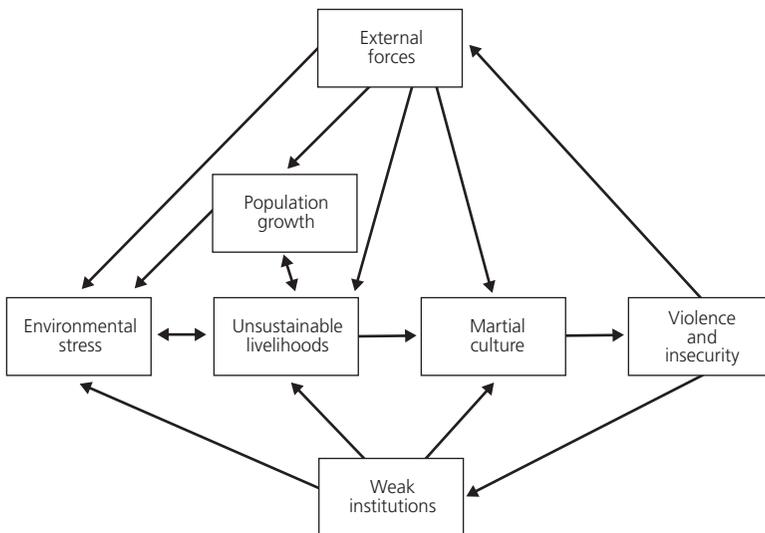
Population growth

Population growth in the region—which may exceed three per cent annually—has been fueled by the influx of Afghan refugees, cultural preferences, and poverty. As in many developing countries, the growing population tends to be poor and landless;⁸⁷ hence it is compelled to settle in environmentally marginal areas such as urban ghettos or the steep sides of mountains. Not only is it difficult to eke out an existence in such environments, but marginal lands are often contaminated by pollutants and more vulnerable to natural disasters such as flooding. In the capital city of Peshawar, for example, infrastructure for sewage and waste treatment has not kept pace with population growth, and exposure to contaminated water is virtually universal (see Hanson, Matthew and Aziz, 2000).

The toll on the fragile alpine environment further north also has been enormous. Under unprecedented population pressures, its forests are being decimated to provide fuel and shelter.⁸⁸ In consequence, topsoil is easily removed by wind erosion and flooding, reducing agricultural productivity and forcing people to rely heavily on food imports from the south. This

degradation is a serious concern in a cash-poor province with about 0.44 hectares of land available per person, only about half of which is productive (that is, available for agriculture, grazing or forestry).⁸⁹ This amount of land is approximately 10 per cent of the area needed to support consumption in the most efficient developed countries such as Japan, and about four per cent of the per capita area currently exploited by residents of the United States (Rees, 2000, page 84). Both population growth and environmental degradation reduce the amount of ecologically productive land available per person, resulting in a dire Malthusian scenario of scarcity. In this light, it is hard to be optimistic about the prospects for developing sustainable livelihoods in the region.

Figure B2. Model of Environmental Stress and Human Security in the NWFP



Weak institutions

Weak institutions exist throughout northern Pakistan. Those created by the British and sustained through bribery and force have persisted, and those introduced by the Pakistani government since 1947 often have been equally inefficient and corrupt. Local institutions such as the *jirga* are not well suited to handling problems of the magnitude faced in the region. Based on over 70 interviews conducted in the NWFP in the summer of 1999, it appears that distrust of the legal system and disillusionment with politicians and civil servants are a common source of anger and frustration

in the province.⁹⁰ For example, according to some official sources, as much as 90 per cent of the property in the NWFP is in dispute and the courts are perceived as susceptible to bribery and hence they are not trusted to respond fairly to conflicts. For many people, the only way to resolve pressing conflicts—such as those related to property rights—is to take matters into one's own hands, an approach that often involves violence. Weak institutions make it extremely difficult to plan and build infrastructure or create jobs, and tend to encourage unsustainable practices.

There is, however, some basis for optimism. First, the Musharraf government has embarked on an anti-corruption program that involves strengthening federal agencies and local authorities and making them more accountable to the public, while reducing and streamlining the middle layer of government—that is, all those agencies that mediate between Islamabad and local communities. On the other hand, Pakistan is developing a robust, skilled, energetic and savvy network of civil society organizations (CSOs). Second, as mentioned earlier, IUCN is exceptionally well-established with eight large offices throughout the country that have developed an extensive environmental program based on Agenda 21 principles. Other non-profits, such as the Aga Khan Foundation, are very visible in the north where they create space for discussion and action in many arenas, even ones rife with obstacles such as the empowerment of women.

Environmental stress

Environmental stress in northern Pakistan is widespread and severe. Polluted water and air in Peshawar, water shortages in much of the south, unsustainable forestry in the north, and land scarcity everywhere are among the environmental problems plaguing the region.⁹¹ External pressures, population growth and weak institutions simultaneously enable destructive practices, many forged during the colonial era, while also making it very difficult to implement effective conservation management. This state of affairs particularly frustrates local authorities and environmental specialists who have invested considerable time and effort in developing the Sarhad Provincial Conservation Strategy for the NWFP (IUCN, 1996). Based on Agenda 21 guidelines, this strategy is a well-informed, highly sophisticated and widely ignored blueprint for sustainable development in the province. It focuses on the importance of developing a holistic approach that involves extensive community participation to improve governance structures, alleviate poverty and improve education in order to make possible long-term sustainable development. The Sarhad Provincial Conservation Strategy places special emphasis on addressing the challenges evident in urban environments and on promoting natural resource management. According to the authors of the report, higher levels of partici-

pation, better environmental legislation and greater governance capacity stand out as urgent objectives for the province.⁹²

Unsustainable livelihoods

Unsustainable livelihoods are the most obvious result of the interactions of the variables described above. Although official figures are not available, direct observation and field interviews suggest that large numbers of men are unemployed or underemployed throughout the region (Hanson, Matthew and Aziz, 2000). Some seek casual labour in distant cities such as Karachi; others venture abroad to work in Middle Eastern oil fields, although cutbacks in this sector of the global economy have reduced opportunities for employment. Still others engage in illegal activities such as smuggling and drug trafficking. Many are compelled to draw down scarce resources for fuel and irrigation at unsustainable rates. Poverty encourages large families: they appear to be a rational strategy for minimizing economic risk by allowing families to maximize the household's economic diversity by sending members to work abroad or in southern cities in case local means of support fail. Nonetheless, unemployment and uncertainty prompt some men to gravitate towards the blame-casting critiques and revolutionary promises of political extremists. And everywhere one sees growing signs of resentment towards the refugees, who are constantly accused of working illegally and stealing.⁹³

Martial culture

Martial culture is not a necessary variable for linking environmental stress to violence and insecurity, but it is a prominent feature of northern Pakistan. If the conditions described above were removed the level of violence in the region might be kept in check by time-honoured cultural restraint mechanisms (well-described in Khan, 1993: 15–46). But in the current context of uncertainty and stress, these cultural constraints are far less effective. Cities and villages in the province can and do erupt into mobs of angry, armed men. Calls to liberate Kashmir and Jammu reach receptive ears.⁹⁴ Even Pakistan's nuclear tests rally great support, perhaps for the message of defiance they send across the country's borders.

Violence and insecurity

Violence and insecurity have long been features of the north, but they are features that are now exaggerated by the negative forces outlined in this analysis. Given the volatile geopolitics of the region, this is not a condition that can be ignored without great risk. Today, northern Pakistan is trapped in a system of reinforcing negative relationships. A failure in one area is quickly transmitted to others. The conditions for a large-scale disaster are in place.

Hot Spots in Northern Pakistan

There are several hot spots in northern Pakistan, each of which has the potential to erupt into violence, sink further into poverty, push inhabitants into illegal or unsustainable livelihoods, or force people to migrate. In each case, people are made insecure. And in each case, environmental stress is likely to be an important part of the story.

Urban centers

Approximately 1.3 million people (including some 500,000 Afghan refugees) live in the NWFP's capital city of Peshawar. Once known as the "city of flowers," Peshawar's infrastructure has been overwhelmed by an annual population growth rate of 4.6 per cent. Raw sewage (only one-third of which is treated), industrial waste, fertilizers and pesticides pour daily into Peshawar's freshwater system. Approximately 40 per cent of deaths in the city are linked to water quality problems. Air pollution is also severe because of toxic vehicle and kiln emissions (brick kilns typically burn car tires). In addition, some 60 per cent of solid waste in Peshawar is not sent to landfills but accumulates in alleys and abandoned fields. Since 1979, Peshawar has served as a staging ground for the *mujahidin* as well as, the hub of the Golden Crescent drug trade and a bustling centre for smuggled goods. High unemployment and growing resentment over the continuing presence of Afghan refugees add to the general instability of the city.⁹⁵

Agricultural areas

Many central and northern districts and villages of the NWFP have relied on old growth forests to provide essential ecological services such as flood control and commodities like fuel and building materials. Today, extensive logging is causing hardship as well as widespread and often violent conflict over property rights (according to unofficial government sources, as much as 90 per cent of NWFP forest rights are in dispute). Ineffective conflict resolution mechanisms, a sluggish economy and ideological extremism further incite the large, young and often unemployed citizenry to diffuse, often criminal, violence.

To the south, tensions are growing around water scarcity and social injustice. Water allocation in Bannu, for example, is based on a system of entitlements established by the British in 1905, and relies on a collapsing irrigation works that is choked with sediment. For example, since its completion in 1962 the Daran Reservoir has shrunk by 60 per cent due to siltation.⁹⁶ The system of canals that divert water from the region's principal rivers (the Kurram, the Indus and the Gambila) is choked by sediment and must be dredged frequently. The end result is that a small number of families granted unlimited rights to water by the British use this customary entitlement as the basis for continuing to monopolize large quantities of water (as well as to control most

of the farmland) while an increasingly restless majority experiences chronic water shortages.⁹⁷ The costs of building more just and efficient water distribution systems have so far been deemed exorbitant by local authorities, although plans to build a new dam on the Kurram River are under review.

Throughout the agricultural regions of the NWFP, population growth and environmental stress, (together with social conditions perceived as unfair, corrupt and inflexible) are the ingredients of potentially violent crisis.

Border region/tribal area

The almost-1,300-kilometre border between the NWFP and Afghanistan has historically been an explosive place. The legacies of British imperialism, the Afghan-Soviet War and the U.S. war on terrorism all haunt this region. For over 20 years the world has been exposed to a steady stream of reports about armed violence, drug smuggling and population movement across this border. What is less well known is that, as elsewhere in the NWFP, the British set up inefficient irrigation systems and large-scale timber harvesting operations in the border region that have resulted in salinization, waterlogging, soil erosion and flooding. In the wake of the Soviet invasion, hundreds of thousands of landmines remained hidden on the Afghan side of the border. Together with high levels of political uncertainty, virtually permanent civil war, severe weather and a chaotic Afghan economy, it is not surprising that refugees will often do anything to keep from returning to their homeland. To survive, these refugees cultivate poppy, produce heroin and smuggle a wide range of goods.

Meanwhile, untreated sewage and industrial wastes dumped into the Kabul River from many sites, especially the cities of Kabul and Peshawar, take a further toll on the environment. The Kabul River has levels of BOD, COD, coliform, nitrites, nitrates, sulphates and sulphides that pose serious health risks, especially to children and people who are malnourished. Again, in an unstable social context, rapid population growth and environmental degradation are creating high levels of human insecurity.

The U.S. war on terrorism may have flushed elements of al-Qaeda out of Afghanistan and into this area, although as we write, these claims have not been verified. Should this prove to be the case, then the region may find itself confronting military intervention from Pakistan and perhaps even the U.S. as well.

Refugee camps

The approximately 200 refugee camps located throughout the NWFP must also be considered as potential hot spots that could erupt into violence. The psychological stresses of living in such miserable and inhumane conditions for two decades make these heavily-armed camps a source of great concern. As many as 1.6 million individuals in northern Pakistan

continue to live as refugees, many of them born and raised in the camps. With little or no formal education and few livelihood options, they constitute a tremendous challenge to the future stability of the region. Accurate information is difficult to obtain, but it is widely believed, both in the region and in the international community, that some inhabitants of the refugee camps are involved in the conflict in Kashmir, had links to the former Taliban government in Afghanistan and engage in illegal activities such as drug trafficking (see Weaver, 2000). Moreover, tensions are growing between refugees and local Pakistanis who have accused the visitors of taking over the transportation sector, working illegally, and committing property and other crimes.⁹⁸ Officially, the governments of Pakistan and Afghanistan would like the refugees to be repatriated. But this has not been an easy policy to implement, especially given the economic and other hardships in Afghanistan.

The conflict between the U.S. and Afghanistan has worsened this problem considerably. On the one hand, the bombing campaign, combined with drought and unemployment, has created incentives for many Afghans to cross the border and enter the refugee camps. This reinforces the problems associated with these camps for over two decades. On the other hand, some analysts are worried that terrorist elements may also have found safe havens in the refugee camps. Should this be confirmed, the possibility of military action cannot be dismissed. In short, the refugees are part of the network of stresses plaguing the region, one that will have to be managed carefully until resettlement becomes viable. The prospects for violence within the camps, emanating from the camps, or aimed at the camps are considerable and probably increasing.

Northern areas/Kashmir

Although this area has been discussed in adequate detail earlier in this chapter, it is worth adding it to the list here because of its obvious status as a hot spot.

Scenarios of the Future

How might the forms of environmentally based insecurity discussed above play out in northern Pakistan in the years ahead? At least four scenarios are plausible.

Implosion

If traditional livelihoods and social systems erode and alternatives do not develop rapidly enough to alleviate growing fear and anger, the region's citizens might revolt against authorities. Violence in one part of the north might trigger violence elsewhere, leading to a general collapse of the economy.

Projection

Conversely, local fears and anxieties might be channeled into violence directed against the Afghan refugees or against Indians in Kashmir and Jammu. In either case, the level of conflict could rapidly spiral into a major catastrophe. Although the leaders of Pakistan and India have agreed to meet with the objective of resolving the dispute peacefully, the negotiations have been slow to take shape, and, to date, there is little basis for optimism.

Intervention

The outside world might decide to escalate its level of involvement in the north by combating the area's drug trade or other criminal activities or as a continuation of the war on terrorism. Intervention could be either indirect (or, as has already happened on a smaller scale in the case of drug trafficking, when Pakistan's national government was pressured to apply force itself) or direct.

Adaptation

Innovative, committed and forward-looking groups in northern Pakistan might succeed in efforts to: (a) improve resource management; (b) promote sustainable development; (c) build educational and other infrastructure; (d) establish effective conflict-resolution mechanisms; and (e) address such thorny issues as property rights, refugees, illegal livelihoods and Kashmir. Various groups—including IUCN, the Aga Khan Foundation, and the Sustainable Development Policy Institute (SDPI)—are already experimenting with reforestation and alternative energy sources such as mini-hydroelectric plants. They are setting up cooperatives to develop onion, fruit and nut industries, encourage tourism, and empower women. And they are encouraging dialogue and cooperation among religious elites, elders, landowners, refugees and government officials. Peaceful change cannot be ruled out as a scenario of the future.

Conclusions and Recommendations

What steps might promote conditions conducive to adaptation and stability rather than violence and conflict? While there are rarely simple solutions to complex problems, several actions can be suggested as priorities:

For external parties

Avoid stereotypes and negative images of the region.

They have little analytical value when they are stripped of historical context, and they are entirely misleading when they are used to characterize an entire population. For instance, simplistic, uncritical accounts of Marxism

guided much analysis during the Cold War, generating conclusions about threats and alliances that, in retrospect, were mistaken or exaggerated. These poor analyses led to serious distortions of the political dynamics of places such as Cuba under Fidel Castro, Chile under Salvador Allende and Nicaragua under the Sandinistas. They also led to costly policies that all too often supplied arms to squads of corrupt elites that, although espousing strong anti-communist views, were in fact committed to little more than personal aggrandizement at any cost. Contemporary political forces such as Islam (which has a long, varied and complex history) need to be carefully assessed in their proper historical contexts.⁹⁹ And contemporary labels such as “failed state,” “quasi-state” and “rogue state”—terms that contain both tremendous symbolic power and implicit charges of incompetence and corruption—need to be reconsidered and avoided when possible. Thickly-detailed accounts of unfamiliar regions that are based on human intelligence and first-hand experience will rarely support simplistic claims about causality or threat. Such accounts will tend to make policy formulation a more challenging undertaking, but they may also lead to policies that work for all sides.

Appreciate the problems inherent in tackling a single issue.

A holistic approach is increasingly the only approach that seems likely to provide adequate leverage on some of the more daunting issues of developing countries. For example, population growth, environmental degradation, land tenure and poverty are clearly interrelated in northern Pakistan and constitute a multi-faceted policy challenge. While small-scale initiatives focused on one facet or another may yield some positive results, substantial progress will require that all aspects of the challenge be addressed. The real and potential impacts of any policy should be assessed across all variables likely to be affected. This of course is what the World Bank (2000) and other multilateral development and lending institutions now are arguing, based on 50 years of project design and implementation experience in diverse settings.

For example, family planning programs may achieve very little when implemented under conditions of dire poverty such as those found now in this region. Restrictions on what women are able to do means that there are powerful incentives to have as many sons as possible as a strategy for gaining social status and reducing economic risk. In turn, poverty alleviation programs are of limited success if they avoid the politically and culturally sensitive issue of clarifying and protecting property rights. But sorting out property rights in the region must be done with some sensitivity to ecological realities and the requirements of sustainability. Northern Pakistan is not only natural resource poor, but the forest cover it relies on for so many services is in grave danger. Unfortunately, coordination among various policy initiatives is not often evident among the governmental and non-governmental groups working in the province.

Resume some forms of development assistance to the region.

The \$3 billion poured into the region by the United States in the 1980s was a great boon to the local economy and may have been of critical importance to the defeat of the Soviet Union in Afghanistan. But it did little to promote long-term development. Indeed, the purchase of vast quantities of arms may have made the north's long-term development more difficult than it would otherwise have been, as the weapons have remained in the region and are freely and cheaply available.

In the 1990s, U.S. aid was cut off to punish Pakistan for its nuclear weapons testing program. Residents of northern Pakistan fail to understand why, during the 1990s, their country fell completely out of favour with the United States in light of their valiant, decade-long involvement in the Soviet-Afghanistan War—which they feel made a small but real and costly contribution to winning the Cold War. They also feel that India's prior development and testing of nuclear weapons created a threat to which Pakistan was obliged to respond (see WWICS, 1999).

At the same time, the international community, including the U.S., largely abandoned neighbouring Afghanistan after the Soviet defeat. Not only did foreign policy shift against Pakistan, the many problems created or amplified during the war against the Soviets were left unresolved. Drug trafficking, arms dealing and the plight of the Afghan refugees received intermittent and generally inadequate assistance, leaving Pakistan to cope with enormous burdens.

The area greatly needs a larger social and industrial infrastructure and more resources to manage environmental change and strengthen the economy. Aid targeted at addressing some of the region's most pressing problems—especially water and air quality in Peshawar, sustainable forestry in the north, and basic education and infrastructure throughout the region—could have immediate, positive results that would also lay the groundwork for economic development and regional stability in the years ahead. The situation in Afghanistan is a source of great concern.

Private communications with Afghans suggest that they are certain that if the region is abandoned again, the future will be extremely violent.¹⁰⁰ Terrorists will resettle in the area, warlords will fight each other and neighbouring countries will be drawn in as they compete for influence and material gain. In 2002 it is hard to measure the commitment of the U.S. and the world community, but very few funds have entered Afghanistan. The magnitude of the country's problems has only been estimated by the World Bank and various NGOs. The preliminary conclusions are that virtually every sector is in dire need of assistance—transport routes are severely damaged, communications systems scarcely function, the health system

is in critical condition, as are the educational and economic realms, governance scarcely exists, and the environment is generally degraded. This bleak situation currently places pressure on Pakistan as Afghans seek to leave their country, as pollution from Kabul flows into Peshawar, as tensions mount in the tribal areas, and as the structure of the drug trade changes, to mention only a few issues. If the world abandons Afghanistan, this pressure will mount, making it more difficult to address problems in northern Pakistan.

For internal parties

Fight corruption and inefficiency in the political system by strengthening federal and local institutions while reducing the mandates of provincial institutions that have failed.

One way of describing the political problems in northern Pakistan is to say that strong local institutions have been diluted and displaced by weak provincial and federal institutions. The question of how to distribute resources and authority within a state has challenged many countries. Even in the most successful cases (such as the United States and Canada), the distributions are constantly renegotiated as needs change. Pakistan has very little that unifies its four provinces symbolically, structurally or institutionally. Given the magnitude of its current problems, it may not have the luxury of working its way towards strong federal and provincial institutions through decades of trial and error. At this point in the country's history, at least some foundational institutions—such as the constitution, the military and the courts—must gain legitimacy in the eyes of all sectors of the society. Indeed, a fair system of laws interpreted and enforced by reliable police forces and courts could be of great value in promoting a healthy, united future. Clarifying and improving civil-military relations, improving tax collection and providing basic public goods and services such as clean water, education and health care are also obvious areas where great gains could be made that would pull together the provinces and add substance to the existing sense of shared fate and purpose.

Focus on the restoration and sustainable use of basic environmental goods and services.

Northern Pakistan is one of those places where improvements in social system performance are contingent on implementing aggressive environmental programs. The region's economy is largely natural resource based, and its water and forests are vital resources that are under particular attack. By protecting these resources and weaving them into sustainable economic practices, local authorities would also be increasing the potential for developing new economic sectors (such as eco-tourism, fruit trees and onion cultivation) that can draw in foreign exchange. If they allow these

resources to collapse, however, it may deprive the region both of its foundation and its future.

Foster sustainable livelihoods by searching for a solution to the highly-divisive issue of contested and unclear property rights.

Throughout the world, unfair or insecure land tenure is a challenge to sustainable livelihoods, conservation management and environmental stewardship. The situation in northern Pakistan appears to be especially dire—there may be neither enough land to support the population nor enough funds to compensate for scarcities through strategic imports. Steps must be taken on both fronts if sustainable livelihoods are to become a reality for the populace. But virtually every potentially positive step forward—from family planning to the cultivation of fruit trees—requires a clarification of property rights to create better stakes in the system and higher levels of security for the populace.

Promote regional stability.

Tensions among Pakistan, India and Afghanistan are serious and show few signs of decreasing in the near future. One out of every five people on the planet lives in these three countries. They border a Russia that has capsized and is sinking fast, and a China that seems poised between ascending to superpower status and fragmenting into several parts (see Goldstone, 1999). The entire region may be a dry forest that a misplaced match could set ablaze. Kashmir and Afghanistan are possible ignition points. And even if a region-wide catastrophe does not develop, simmering tensions make it difficult to move many important policy sectors forward, especially those that would benefit from transnational cooperation. In either case, the promotion of regional stability would be wise. Pakistan has ties to both Afghanistan and India that could allow it to play a vital regional role as peace-builder.¹⁰¹ The United States or another objective and powerful third-party should facilitate a framework for such a dialogue.

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Environment and Security Brief 2

Environmental Causes of Human Migration

By Ted Gaulin

While the influx of refugees from Afghanistan have had a direct, severe and multifaceted impact on sustainability in Pakistan, the case represents only one form of interaction between human migration and the environment. In many other cases, researchers have found that environmental degradation is not merely a consequence of migration, but also a cause. Indeed, by one estimate the number of people displaced from their homeland because of marked environmental disruption is nearly as high as those displaced for political reasons.¹⁰² While verification of such assertions is difficult since the UN and other organizations do not track so called “environmental refugees” as a specific category, recent research indicates that environmentally induced human dislocation is a real and growing trend. Studies suggest that large populations are being displaced for three principle reasons: the gradual degradation and depletion of vital natural resources; the sudden disruption of human and ecological processes by natural disasters; and the contamination of traditional habitats by industrial accidents.

The work of Homer-Dixon has demonstrated that in a number of developing countries, population growth and unsustainable human activities have degraded or depleted vital resources such as cropland water and forests, leading to large-scale internal migrations. In Mexico, for example, population pressure and unsound agricultural practices have produced a scarcity of cropland that has caused tens of thousands of peasants to migrate across the country in search of cultivable land. The degradation or depletion of key natural resources has produced similar migrations in Rwanda, South Africa, Haiti, and the Philippines.¹⁰³

In addition to gradual or cumulative environmental changes, sudden environmental disruption by earthquakes, droughts and floods can also displace large numbers of people. A drought in the Sahel in the mid 1980s, for example, caused more than two million people to leave their homes in search of food, many of them crossing national borders. Likewise, severe flooding in Bangladesh has caused massive internal and transnational migration over the last 20 years.¹⁰⁴ According to the IPCC, migration resulting from these forms of environmental disruption is likely to increase in the future, as global climate change is projected to produce stronger storm surges and more frequent droughts.¹⁰⁵

Human-induced environmental disasters can also lead to large-scale human dislocation. This is dramatically illustrated in the case of Bhopal, India where the accidental release of toxic gases from a pesticide factory led to the flight of nearly 800,000 residents, and in the case of Chernobyl where the explosion of a nuclear reactor caused the exodus of more than 115,000 people.¹⁰⁶ Similar accidents, albeit on a smaller scale, occur frequently throughout the world. Between 1986 and 1992, there were over 75 major chemical accidents which displaced over 2 million people.¹⁰⁷ In the former Soviet Union, pollution stemming from cold war weapons production have led thousands to migrate in search of habitable land and clean water.¹⁰⁸

There are number of important dynamics at work in the processes outlined above. First, these three causes of environmental displacement can interact in ways that make environmental disruption worse. For example, scholars argue that the impact of the drought in the Sahel was amplified by agricultural practices that had seriously degraded the quality of the soil.¹⁰⁹ Second, environmental refugee movements can have powerful feedback effects that exacerbate environmental pressure in the areas they occupy. For example, Homer-Dixon shows how migrants are often relegated to marginal lands—such as steep hillsides—that are least productive and easily degraded.¹¹⁰ This pattern virtually ensures the future vulnerability of refugee and host community, and it sets the stage for future migration. Finally, scholars emphasize that the impact of environmental disruption on human migration is strongly influenced by social and political factors such as equity in the distribution of resources, the degree of political openness, and the level of social conflict. This implies not only a need for sustainable development, but for also policies that promote human security more generally.

Environment and Security Brief 3

Impacts of Refugee Movements on the Environment: UNHCR's Response

Conflict and disaster often result in the mass displacement of whole communities, which can, in turn, generate substantial environmental impacts. In recognition of this, the United Nations High Commission on Refugees (UNHCR) has incorporated environmental considerations into its programs in order to minimize the impact of refugee crises on the environment.

Refugee camps are often established in environmentally sensitive areas, such as arid and semi-arid regions, where the impact of large numbers of people and their livestock can easily exceed the buffering and carrying capacity of the local environment. Renewable natural resources commonly become a basis for survival, as forests are cleared for shelter, firewood, and livestock feed, and turned into farmland. Forest destruction, and the accompanying effects of soil erosion, water sedimentation, and land degradation, often holds serious implications for human welfare and ecosystem health in the settled region, as long-term sustainability is compromised.¹¹¹

Such refugee-related impacts on the ecosystem can lead to tension with the local community, as competition for resources intensifies and refugees new to the area are unfamiliar with traditions or laws protecting wildlife or sacred sites. This increased competition can therefore undermine traditional resource management systems, whereby members of the local community forego sound management practices in order to ensure their own access to and use of natural resources. In addition, refugees are often used as cheap sources of labour by resource-extractive enterprises, and often become the scapegoats for subsequent environmental damage to a region.¹¹²

UNHCR responded to these issues in 1993 by establishing the Office of the Senior Coordinator on Environmental Affairs at Headquarters in Geneva. The Office prepared *Interim Guidelines on the Environment* the following year, and detailed its new environmental policy in *UNHCR Environmental Guidelines*, which was issued in 1996.¹¹³

Although UNHCR's primary concern is the immediate welfare of refugees, environmental protection measures are now included in each of its three phases of work: emergency, care and maintenance, and durable solutions. In order to address environmental concerns during

the emergency phase, where the immediate welfare of the refugees is the priority, UNHCR contingency planning includes looking for camp sites that minimize the burden placed on local populations and their resources. Because this is not always possible during emergency situations, where there is little time to make decisions, environmental problems are more likely to be addressed during the care and maintenance stage. Environmental impacts are considered during camp planning and management processes whereby activities such as road construction, site clearance, drainage systems, and shelter facilities are factored into decisions. Social and environmental surveys are conducted to monitor refugee impacts on the local population and ecosystem, and if necessary, more appropriate campsites are identified. To reduce the level of resource consumption, UNHCR also promotes environmentally friendly technologies such as alternative fuels or fuel-efficient stoves and techniques.¹¹⁴ Finally, during the durable solutions phase of work, which seeks to secure refugee livelihoods either through repatriation, local settlement, or resettlement in a third country, environmental rehabilitation programs are implemented in order to reverse the negative impacts of refugees. Environmental education and training is also provided so as to encourage sustainable resource management and improved relations between refugee and local populations.

UNHCR's success in these efforts is due in large part to the cooperation and contributions of governments and other organizations. Through continuation and expansion of these projects and collaborations, UNHCR is seeking to build a better and more secure future both for refugees and their environment

Endnotes

53. This chapter is indebted to research undertaken for Hanson, Matthew, and Aziz (2000), and to comments and suggestions made by Art Hanson and several reviewers.
54. See Homer-Dixon & Blitt (1998); Homer-Dixon (1999); Deudney & Matthew (1999); Lowi & Shaw (1999); Diehl & Gleditsch (2001). For an interesting alternative view developed in South Asia, see Nauman (1996).
55. See Kaplan (1994) and Homer-Dixon (1999).
56. Northern Pakistan includes the North-West Frontier Province, the Northern Areas, and the Tribal Areas, all of which are separate administrative entities.
57. By “war on terrorism” we are simply reiterating the terminology used by the United States to explain and justify its campaign in Afghanistan, as this terminology has been widely adopted and will be familiar to most readers.
58. For an overview of this work, see Deudney and Matthew (1998). Extensive bibliographic material, as well as summaries of much of the research conducted over the past decade, is available in the Woodrow Wilson Center’s annual Environmental Change and Security Project Report, edited by Geoff Dabelko.
59. For discussion of environment and security in the region, see Myers (1993), pages 101–121. For a discussion of the challenges facing Pakistan at this time, see Lieven (2002).
60. For similar cases, see Homer-Dixon & Blitt (1998).
61. There are certainly more optimistic views, and some trends are very positive. These are mentioned, as appropriate, throughout this chapter.
62. These plans are presented in great detail in the Sarhad Conservation Strategy prepared during the 1990s by a variety of Pakistani organizations in association with the International Union for the Conservation of Nature. See IUCN (1997).
63. Private communications with a large number of Afghans suggests that, at this point in time, only Kabul is fully under the control of the transition government.
64. For a succinct and colourful overview of the country, see McCarry (1997).
65. In many ways, the Indus River is the lifeblood of the region. Originating in western Tibet, it flows northwest through China and Kashmir, then shifts south, extending virtually the entire length of Pakistan before draining into the Arabian Sea a few miles east of Karachi. The Kabul flows into it from Afghanistan, meeting the Indus at Peshawar. Several other rivers flow from India, ultimately converging in the Panjnad, which meets the Indus almost in the geographic center of Pakistan. Settled for thousands of years, the region served by the Indus includes extensive irrigated farmland. In 1960 India and Pakistan signed the Indus Waters Treaty, which divides the Indus basin into

two systems, exclusively controlled by India (about 20% of the water) and Pakistan (about 80% of the water) respectively. As in the case of other shared river basins such as the Mekong, Nile, Jordan, Tigris and Euphrates, some analysts worry that as water needs grow in both countries, attempts may be made to restructure the Treaty, peacefully or through the use of arms. See, for example, Klare (2001).

66. For further detail, see IUCN (1998) and van Dijk & Hussein (1994).
67. Members of the former Taliban government in Afghanistan are Pashtun.
68. Although Khan does not represent the Pashtun politically, he traces his ancestral roots to this group and has written about its culture and politics (1993).
69. As the well-known Indian scholar Anil Agarwal writes, “the British in effect made us illiterate, they made us poor, and they deurbanized us” (1996, page 13).
70. For a valuable account of this period written by a Pakistani intellectual, see Mirza (1999).
71. For an excellent discussion, see Margolis (1999, 2000).
72. In some parts of the province, overgrazing is also a problem. This practice may be especially acute in some of the marginal areas in which refugee camps were established.
73. After more than fifty years of conflict, reports suggest that many of the people of Kashmir and Jammu would still like to be independent—an option neither of their neighbours endorses. For an interesting, well-informed discussion of the conflictual politics of this region, see Margolis (1999, 2000).
74. The term Kashmir is often used to refer to both Kashmir and Jammu, and to a large swathe of the Northern Areas. This geographic reference originated when the Hindu Ghulab Singh, with British support, seized control of several principalities—which then became known collectively as Kashmir—in the mid-nineteenth century.
75. From a UN perspective, resolution of this issue is as elusive as that between Israel and the Palestinians, which has also been on the UN agenda for over five decades.
76. This attitude has been confirmed in extensive interviews conducted in the region in 1999.
77. Readers unfamiliar with Islam may find Armstrong’s (2000) highly regarded introduction of value.
78. It is important to stress that we do not wish to characterize Pakistan as a “failed state,” a term popular in the United States in the 1990s, although we recognize that it has several serious and long-term political problems that make the state less efficient at providing public goods and services than one might wish. Mirza (1999), for example, identifies many accomplishments in the realm of state-building in his, admittedly partisan, historical analysis.

Clearly there are unifying elements at work and trends that hold great promise. A highly educated bureaucracy, extensive sustainable development plans, great contributions to world affairs such as the assistance provided to the international community following the Soviet invasion of Afghanistan and during the campaign against terrorism—these are a few diverse examples of remarkable achievements. Our point in this chapter is that the positive forces in Pakistan must operate in a turbulent context and face serious challenges, described here, which have been amplified or created by outsiders. Such conditions make the project of state-building daunting and, at times, erratic, but they do not make it impossible.

79. This is probably not an unusual situation. See, for example, Walzer (1994), pages 85–104.
80. The term “corruption” is widely used by Pakistanis themselves when they discuss political problems, but one should be careful not to read too much into it. A sustained political analysis might well reveal that the situation is quite complex, and, in some ways, distorted by the idea of corruption.
81. According to van Dijk and Hussein, the province’s forest cover is about equally distributed between the Hazara and Malakand Divisions of the NWFP, and in Hazara, it is declining at the rate of between 1.4 and 8 percent annually. This means that the forest cover could disappear within twelve to seventy years (1994, page 35). Van Dijk and Hussein identify the breakdown of customary ownership systems as among the major causes of the rapid rate of deforestation. Throughout the 1990s, the government implemented a ban on logging in an effort to reduce the amount of flooding in the region. Field observation suggests that the ban had a minor impact on deforestation rates. An aggressive reforestation program has added forest cover, but it is not clear that this will survive and flourish. See Hanson, Matthew, and Aziz (2000).
82. For an excellent discussion, see Weaver (2000).
83. For a useful account of the Taliban, see Marsden (1998) and Rashid (2000).
84. Portions of this analysis have been published previously in Matthew (2001).
85. It would not be inaccurate, however, to note that India has made this charge without making public much evidence.
86. At the time this is being finalized, Pakistan is collaborating with the United States in its efforts to dismantle al-Qaeda, the terrorist organization linked to Bin Laden and to the September 11 attacks. This cooperation may lead to more financial assistance for northern Pakistan. An escalation in the number of refugees in the area makes further assistance extremely important. If it is not forthcoming, the situation may worsen dramatically. Moreover, disagreement over the U.S. approach to punishing Afghanistan for its alleged support of al-Qaeda will almost certainly intensify tensions in Pakistan, and especially in the north.
87. Myers contends that if “the present 3.1 percent growth rate continues [in Pakistan], the amount of cultivated land per rural inhabitant will decrease

from 0.8 acre in 1983 to less than half as much in 2010” (1993, page 107). To put this into a perspective that gives bite to the concept of scarcity, it is useful to consider calculations made by William Rees (2000). According to Rees, the most efficient developed countries, such as Japan and Korea, require about 5 acres of productive land per capita. The least efficient, such as Canada and the United States, require closer to 12 acres per capita. In all cases except Canada, developed countries do not have enough productive land to support their needs and must draw from less developed countries. In this light, Pakistan’s 0.4 to 0.8 acres per capita must be seen as inadequate for anything approximating a Western lifestyle.

88. According to a report prepared by the IUCN, fuel wood consumption in northern Pakistan is ten times higher than elsewhere in the country. In the forty years from 1952 to 1992, forest cover in Hazara Division declined by 52 percent. Unfortunately, this is an area in which trees grow slowly but burn quickly (IUCN, 1998, page 11). Myers writes that “Fuelwood accounts for half of the country’s energy requirements and nine-tenths of wood consumption, and demand is expected to double within another fifteen years” (1993, page 106).
89. Author’s calculations, based on various sources.
90. For information on field work, see Hanson, Matthew, & Aziz (2000).
91. Information drawn from Myers (1993); van Dijk & Hussein (1994); IUCN (1998); and Hanson, Matthew, & Aziz (2000).
92. The following quotes are indicative of the tenor of the Sarhad Provincial Conservation Strategy: “The Sarhad Provincial Conservation Strategy aims to secure the economic, social and ecological well-being of the people of the NWFP through the conservation and sustainable development of the province’s natural resources.” (IUCN, 1997, page 5)
“The neglect and abuse of the environment over the past decades has come to pose a formidable challenge, and the large number of complex problems cannot be addressed in a short period of time.” (Page 3).
“The SPCS has identified certain priority areas for action. These include governance and capacity development, poverty alleviation and population, community participation, communication and education, urban environment and sustainable cities, sustainable industrial development, natural resources management, biodiversity conservation and cultural heritage and sustainable tourism.” (Page 5)
93. Articles in the major newspaper, *The Frontier Post*, often link refugees to crime even in the absence of evidence.
94. About 60,000 people have been killed in Kashmir and Jammu since 1989.
95. Data from Hanson, Matthew & Aziz, 2000.
96. Myers notes that “Because of sedimentation, the Mangla and Tarbela reservoirs, two of the largest in the world, are expected to remain operational for only a fraction of their anticipated lifetimes” (1993, page 106).

97. According to Myers, water shortages may prove to be Pakistan and the region's greatest challenge. He writes that "Year after year, acrimonious debate breaks out among the provinces over sharing water supplies. Worse still, these internal conflicts may well spill over into India. Of the Indus River basin's 400,000 square miles, 160,000 square miles lie across the border in India" (1993, pages 107–108).
98. Based on a review of articles in *The Frontier Post* in the summer of 1999.
99. For information see Armstrong (2000).
100. All such communications are confidential at this time. However, an indication of the type of sources referred to is available at <http://www.gechs.uci.edu>.
101. For a thoughtful analysis of the complex links between Pakistan and India, see Mirza (1999).
102. J. Jacobson, "Environmental refugees: A yardstick of habitability," *Worldwatch* paper, 86 (Washington, D.C.: Worldwatch Institute, November 1988).
103. On the cases of Mexico, Rwanda and South Africa see T.F. Homer-Dixon and J. Blitt (eds), *Ecoviolence: Links among environment, population and scarcity* (Lanham: Rowman and Littlefield, 1998). *On the cases of Haiti and the Philippines* see Thomas Homer-Dixon, *Environment Scarcity and Violence* (Princeton: Princeton University Press, 1999).
104. A. Suhrke, "Environmental degradation, migration, and the potential for violent conflict." In Nils Petter Gleditsch (ed.) *Conflict and the Environment* (Dordrecht: Kluwer Academic Publishers, 1997), pp. 264–268.
105. *Ibid.* p 263.
106. E. Vlachos, "Environmental refugees: The growing challenge," In Nils Petter Gleditsch (ed.) *Conflict and the Environment* (Dordrecht: Kluwer Publishers, 1997), p. 304.
107. S. Lonergan, "The role of environmental degradation in population displacement," *Environmental Change and Security Project Report 4* (1998), p. 9.
108. E. Vlachos (1997), p. 304.
109. A. Suhrke (1997), p. 362.
110. T. Homer-Dixon and J. Blitt (eds.) (1998), pp. 6–7.
111. United Nations High Commission for Refugees (UNHCR), *Refugees and the environment: Caring for the future* (Geneva: Environment Unit and Public Information Section, 1999), p. 6.
112. *Ibid.*, p. 12.
113. *Ibid.*, p. 9.
114. *Ibid.*, pp. 10–11.

