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2008-06-12

## Security of Ecology in Afghanistan

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Culture and Conflict Review (Summer 2008), v.2 no.3

<http://hdl.handle.net/10945/27382>

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# The Culture & Conflict Review

Vol. 2, No. 3, Summer 2008



## The Security of Ecology in Afghanistan

Jeffrey De Joannis<sup>1</sup>

*We can't ignore nature any longer, because it affects every aspect of our well-being and even determines our survival. Yet today...Western societies give nature little attention. They push it to the sidelines of public discussion, focusing instead on the headline issues that regularly hijack social, economic, and political debate. And they tend to dismiss people who concern themselves with nature as, at best, softheaded do-gooders, or at worst, eco-freak fanatics<sup>2</sup>.*

*The twenty-first century will, in fact, be the Age of Nature. We'll learn, probably the hard way, that nature matters: we're not separate from it, we're dependent on it, and when there's trouble in nature, there's trouble in society.<sup>3</sup>*

- Thomas Homer-Dixon

Homer-Dixon refers to five "tectonic stresses" synergistically confronting the modern world: Population growth and urbanization, lack of reliable energy sources, environmental damage, climate change, and increasing economic inequity. The premise of this essay is that nowhere are these stresses more extreme than in Afghanistan. A geographic, political, economic, and cultural nexus, today the country is profoundly dysfunctional. The environmental threat to its existential viability is widely ignored, given the focus on internal military security. The latter is important for nation-building, à la Weber's monopoly on the legitimate use of force. Yet the purpose of this essay is to explore an alternative view of security; long term economic prosperity of its people based on land sustainability. This essay identifies direct and indirect impacts from 30 years of war on Afghan ecology, as well as non-war-related impacts. Afghanistan is beset with multiple layered problems that have accumulated over decades and cannot be solved sequentially or independently. Success in military security without addressing environmental crisis may still result in a profoundly failed

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<sup>1</sup> Air Force Major Jeffrey De Joannis spent 14 years doing aeronautical and astronautical engineering prior to earning a graduate degree in International Relations and transitioning to Political Affairs Strategist. Pending completion of additional graduate work in Security Studies at the Naval Postgraduate School, he is slated to serve as the Air Attaché to Nigeria beginning in 2009.

<sup>2</sup> Thomas Homer-Dixon, *The Upside of Down: Catastrophe, Creativity and the Renewal of Civilization*, (Washington: Island Press, 2006): 12.

<sup>3</sup> *Ibid*, 17.

state. Most analyses of Afghanistan discuss the ecology of security, but this essay is about security of the ecology.

### **A Dramatic but Delicate Land**

Survival has historically been a challenge in Afghanistan. It is a landlocked, arid, high altitude terrain; mainly rugged mountains and deserts. Deserts make up one sixth of the Texas-sized country and challenge even the Kuchi nomads.<sup>4</sup> The Hindu Kush occupies two thirds of the country. Aside from the Solaiman ranges to the south and east, on the fringe of Indian subtropical monsoon, mountains are rocky, some with scattered scrubby vegetation at lower altitudes.<sup>5</sup> Outside of a few watered valleys, it is a fragile ecosystem in terms of supportable human and animal population density.<sup>6</sup> Crops and growing seasons are limited. Topsoil is vulnerable to washing or blowing away. Still, significant biodiversity has existed, and the land has sustained livelihoods based mainly on farming and herding, along with sporadic foraging and hunting, for centuries.

At least 80 percent of the population is rural and relies directly on natural resources for subsistence and income.<sup>7</sup> Perhaps as much as 75 percent of the land is suitable for sparse grazing, while only 10-15 percent is suited to agriculture. Based on annual production data, arable land was 15-25 percent of the country prior to the Soviet invasion - about two thirds greater than today.<sup>8</sup> Five percent of the nation's land has accounted for 85 percent of its agriculture. About half farmed land is rain supplied and other half irrigated, meaning that waterways are critical.<sup>9</sup> The limited agricultural and herding areas are under pressure. In some areas desertification is occurring because lands requiring maintenance are abandoned, while in other areas the same result accrues for the opposite reason - overuse and reclamation attempts.<sup>10</sup> By 2001, one estimate had

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4 Daud S. Saba, "Afghanistan: Environmental Degradation in a Fragile Ecological Setting," *The International Journal of Sustainable Development and World Ecology* 8 (2001): 281.

5 Ibid.

6 Michael K. Steinberg, Joseph J. Hobbs and Kent Mathewson, *Dangerous Harvest: Drug Plants and the Transformation of Indigenous Landscapes*, (NY: Oxford University Press, 2004).

7 UNEP, *Afghanistan: Post Conflict Environmental Assessment*, (Switzerland: UNEP, 2003): 15; Stacey Stowe, "Preserving Land and Wildlife, to Restore the Afghan Identity." *New York Times*, March 6, 2007.

8 Daud Saba, "Afghanistan's Natural Heritage: Problems and Perspectives," Lemar-Aftaab (2001).

9 Edward Girardet and Jonathan Walter, *Afghanistan*, (Geneva, Switzerland: Crosslines Publications, 2004): 139.

10 Saba, "Afghanistan: Environmental Degradation in a Fragile Ecological Setting," 282.

only six percent of arable land actually in use, which helps explain why agricultural production was 50 percent less than in 1979.<sup>11</sup>

Without the southwestern Hindu Kush drainage into the Helmand River system, southern Afghanistan would be as foreboding as Baluchistan's western desert. In particular, the Sistan basin includes a vital connection of marshes and lakes known as the Hamoons. The Hamoons have been impacted by population growth, more intensive upstream extraction for irrigation, and changed runoff patterns due to hydroelectric projects.<sup>12</sup> Forty percent of irrigated lands are found north of the Hindu Kush along the Amu Darya (Oxus River) basin. At the time of the Soviet invasion, the river ran all the way to the Aral Sea yet today it stops short – dried up because of over extraction by Turkmenistan and Uzbekistan for cotton and hydroelectricity.<sup>13</sup> Irrigation systems employ natural and man-made open channels as well as covered karaizes. Karaizes are underground horizontal channels that cross the water table at a slight grade and thus use gravity to divert water to a desired location. Karaizes are important in hot/dry areas because keeping the water underground until it reaches the target area prevents evaporation.

Foreign aid since the 1950s amounted to billions of (US) dollars. Despite significant missteps regarding aid management and development efforts, by 1978 Afghanistan was essentially self-sufficient for food, it exported high quality fruits, silk, cotton, and other products, and had growing state-owned industries of mining, energy, transportation, communication, cement production, textiles, and agro-processing.<sup>14</sup> Roughly half the GDP was based on agriculture or animal husbandry. Wheat is a staple in Afghanistan, with cereals, rice and alfalfa common, as well as some cotton and tobacco as cash crops. A wide variety of fruits and nuts are cultivated, or in the case of pistachios, collected from wild groves. Orchards and vineyards have long traditions, even in suburban areas. Almonds, walnuts, pomegranates, melons, mulberries, peaches, apricots, cherries, grapes, olives are typical.

Afghan forest cover consists of three types: dense, mixed hardwood (e.g. oak and cedar), open woodlands, and riparian forest.<sup>15</sup> The dense growths are in the eastern part of the country along the border with Pakistan. The open woodlands include wild pistachios. Such areas are very sensitive to climatic disturbances. The riparian areas mainly occur around marshlands and in the

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11 Saba, "Afghanistan's Natural Heritage: Problems and Perspectives."

12 UNEP, *History of Environmental Change in the Sistan Basin*, (Switzerland: UNEP, 2006): 5-7, 28.

13 UNEP, *Afghanistan: Post Conflict Environmental Assessment*, 60.

14 Girardet, *Afghanistan*, 139-140, 200.

15 UNEP, *Afghanistan: Post Conflict Environmental Assessment*, 63.

four major river systems; Amu Darya, Hari River, Kabul River and Helmand River. Deforestation may be the single biggest environmental calamity faced by Afghans because of the ripple effects, including loss of fertile soil.

### **Pre-war Environment**

Gradual environmental degradation has occurred for decades and centuries prior to the Soviet invasion. Dense cedar forests covered greater parts of Afghanistan during the time of early recorded civilizations more than 3000 years ago.<sup>16</sup> Much of this survived as recently as the 16<sup>th</sup> century Mughal era.<sup>17</sup> Over the last few hundred years, population growth increased attendant herds of goats and sheep. There were about five million Afghans at the beginning of the 20<sup>th</sup> century. The population tripled by the beginning of the Soviet invasion and today stands at roughly 23 million.<sup>18</sup> Over-grazing and clearance of wooded areas for grazing cumulatively caused large scale deforestation. The acceleration of deforestation in the 20<sup>th</sup> century was partly due to illegal and unsustainable lumbering.

Impacts on arable land due to population pressure were measurable in the 1930s but were ignored. In the 1950s through 1970s timeframe, significant foreign aid came from both the West and the Soviets in the context of the Cold War competition. The Afghan government showed initiative but imprudent strategy in backing grand large scale projects. The US-financed and designed Helmand-Arghandab Valley (HAVA) hydroelectric dam project is an example of the efforts that were in vogue. The aim was to increase crop volume and build a cash crop export based economy as had been accomplished to some extent in Turkey. However, farmer traditions and the delicate nature of Afghanistan's hydrologic systems were not well suited, necessitating costly and lengthy compensatory measures.<sup>19</sup>

The severe drought of 1998-2002 received a great deal of attention, yet droughts are inherent in the climatic cycle. However, droughts in the late 20<sup>th</sup> century have been particularly severe due to deforestation.<sup>20</sup> A drought from 1970-72 killed 80,000 people (thanks in part to drastically inept government response).<sup>21</sup> Water from irrigation or rain, is not slowed and captured by vegetation to filter into the water table. Instead, rapid runoff occurs that carries

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16 Saba, "Afghanistan's Natural Heritage: Problems and Perspectives."

17 UNEP, Afghanistan: Post Conflict Environmental Assessment, 63-64.

18 Samuel S. Lieberman, "Afghanistan: Population and Development in the 'Land of Insolence'," *Population and Development Review* 6 (June, 1980): 271, 275; Edward Girardet, *Afghanistan*, 133.

19 Lieberman, "Afghanistan: Population and Development in the 'Land of Insolence'," 276, 285-86.

20 John Groninger, "Forestry and Forestry Education in Afghanistan," *Journal of Forestry* 104 (Dec, 2006): 426-7.

21 Khaleda Atta, "Drought Exigency to Add to List of Problems for Afghanistan." *Lemar-Aftaab* (2001).

away fertile soil and propagates a vicious cycle of deforestation. One proposed rule of thumb is that 15 percent of a country should be forested to retain topsoil and ensure air quality.<sup>22</sup> At most, forests made up 4.5 percent of Afghanistan's territory at the start of Soviet invasion, yet now they may be less than one percent.

Though known for fierce resistance to outside authority, Afghans' strongest identity may have to do with the land and wildlife around them. The importance of wildlife is evident in their houses - symbols of specific animals are common decorations.<sup>23</sup> People in distinct geographical regions have made a living because of their knowledge of the ecology of that area. When the area changes or people are forced to move, a downward spiral may occur as people with vital knowledge of their ecosystem are displaced. Even the nomads are subject to this stress. Due to the diasporas of different ethnic groups and the different ecological zones, biodiversity correlates in part to cultural diversity. There is a possibility of competition over resources triggering wider ethnic-driven conflict as both resources and group identities are perceived to be in jeopardy.<sup>24</sup> United Nations Environmental Programme (UNEP) reported in April of 2007 that the ethnic conflict in Darfur is attributable in part to climate change, environmental degradation and natural resource scarcity trends over the last four decades. At the heart of the clash is competition over land for herding versus agriculture.

### **Direct Effects of War**

Genghis Khan devastated much of northern and western Afghanistan. The Mongols ruined karaisas as far as the Mesopotamian desert, some of which were not repaired until the 20<sup>th</sup> century.<sup>25</sup> In the modern era, there have been four phases of war in Afghanistan: The 1979-1989 Soviet invasion, the 1989-1994 civil war, the 1994-2001 rise of the Taliban and war against the Northern Alliance, and the US/NATO entrance into the latter in 2001.

The Soviets did not cause appreciable damage to urban areas, but developed an offensive version of "scorched earth" strategy to destroy the mujahidin base of material support. The strategy was intense in the 1985-86 timeframe, when the war had become a strategic stalemate. In part, it was a reaction to improved weapons in the hands of mujahidin, including Stinger rocket launchers that made Hindis vulnerable. Su-24 and Su-25 attack aircraft

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22 "Environmental Disaster Looms in Afghanistan," *The Ecologist* 32, (Jul/Aug, 2002): 12.

23 Stowe, "Preserving Land and Wildlife, to Restore the Afghan Identity."

24 Saba, "Afghanistan's Natural Heritage: Problems and Perspectives."

25 The Applied History Research Group, "The Islamic World to 1600," University of Calgary Multimedia History Tutorials, retrieved from [http://www.ucalgary.ca/applied\\_history/tutor/islam/mongols/ilkhanate.html](http://www.ucalgary.ca/applied_history/tutor/islam/mongols/ilkhanate.html)

were brought into greater use to bomb entire villages and populated valleys.<sup>26</sup> People and animals were killed and shelter, small industry, farming lands, grazing lands, and irrigation systems were damaged. Approximately one million of the roughly 15 million Afghans were killed by Soviet military action.<sup>27</sup>

One estimate is that 22,000 villages and 3000 irrigation systems – perhaps as many as half of the latter in existence – were destroyed. A United Nations estimate reported 27 to 35 percent of all irrigation systems damaged.<sup>28</sup> An estimate from the Afghan communist regime in 1988 identified 22,000 total villages before the invasion, of which 2,000 were destroyed and 5000 seriously damaged by 1985.<sup>29</sup> The same year, *Washington Post* surmised that the systematic irrigation sabotage would likely be the most difficult Soviet blow from which to recover.<sup>30</sup> Even in the best of conditions, intensive work is required to maintain the intricate *karazines*. Afghan government records in 1994 reported 35,000 total villages prior to invasion, of which 26,000 were destroyed, and others damaged.<sup>31</sup>

Also destroyed were hard-to-replace vineyards, orchards, ornamental trees, and shrubs.<sup>32</sup> In many cases, this occurred for security reasons, i.e., to eliminate hiding places and ambush points.<sup>33</sup> Destruction of vegetation along roads, which were important for mechanized Soviet maneuver, was common. Roads typically ran along narrow valleys and were good ambush sites, but after vegetation removal to prevent such, the areas were susceptible to erosion. Landslides were a direct result.<sup>34</sup> One third of the population fled their homes, leaving farms, fields, and orchards to decay. Mines denied use of land, and hundreds of thousands of livestock were killed from either the mines or bombing.<sup>35</sup> Agriculture declined by nearly a factor of four compared to pre-1979 production. Despite the loss of livestock, overgrazing the surviving farming centers caused topsoil erosion.<sup>36</sup>

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26 Richard Evans, "Scorched-Earth Warfare." *Macleans* 99 (Dec 1, 1986): 32-33.

27 Raphael, "Mired in Conflict: Effects of the Protracted Struggle in Afghanistan," 40.

28 Tareq A. Formoli, "Impacts of the Afghan-Soviet War on Afghanistan's Environment," *Environmental Conservation* 22 (Spring, 1995): 67.

29 Richard M. Weintraub and Jonathan C. Randal, "Returning Afghans Would Face Many Problems; Millions of Refugees Would Need Food, Water, Housing After a Soviet Pullout." *The Washington Post*, Mar 30, 1988.

30 *Ibid.*

31 *Ibid.*

32 Girardet, *Afghanistan*, 140.

33 Formoli, "Impacts of the Afghan-Soviet War on Afghanistan's Environment," 66.

34 Saba, "Afghanistan: Environmental Degradation in a Fragile Ecological Setting," 281.

35 Girardet, *Afghanistan*, 140.

36 Formoli, "Impacts of the Afghan-Soviet War on Afghanistan's Environment," 66.

Before 1979, Afghanistan had a nascent program of national parks and protected cultural and wildlife sites. These contributed to tourism, which was a key industry.<sup>37</sup> War damage to the parks was generally quite severe. An example is Paghman Canyon near Kabul, which was devastated during military engagements.<sup>38</sup> Little reported is the fact that the Soviets disposed of dangerous substances in quantity. Vast amounts of internationally banned pesticides were still stockpiled in the country in 1992, which the Soviets termed agricultural aid. This seems dubious given the cross-purpose of destroying agricultural infrastructure via scorched-earth tactics. Even less known, and unconfirmed, is a report of clandestine disposal of radioactive waste in remote areas. If this did occur it was apparently not an orchestrated tactic.<sup>39</sup>

### **Land mines**

Landmines injure and kill people and animals, and deny areas for transit, farming, and grazing. Estimates range from 10 to 20 million mines, mainly Soviet, making Afghanistan probably the most heavily mined country in world.<sup>40</sup> Some mines were laid during the civil war and more by the Taliban, despite the latter declaring them un-Islamic in 1998.<sup>41</sup> Over 85 square miles were cleared prior to the US invasion, but more than three times that area remains, which could take 20 years to clear at a steady pace.<sup>42</sup> Half the victims are children, who are shepherds.<sup>43</sup> The other half is adult males, which means ripple effects to the families for which they are breadwinners.<sup>44</sup> A 1995 survey of refugees, Kuchi nomads, and rural residential Afghans (7000+ surveyed) determined that seven percent of resident and refugee householders had to move from their homes or were prevented from returning to their homes, respectively. As many as 78 percent reported daily activities were affected by mines - that is, farming, wood-gathering, or herding. Kuchis were most affected by loss of herd animals. Over

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37 Stephan Fuller, "Planning for Peace," *Alternatives Journal* 32 (2006): 7.

38 Formoli, "Impacts of the Afghan-Soviet War on Afghanistan's Environment," 67.

39 Ibid, 68.

40 Steinberg, *Dangerous Harvest: Drug Plants and the Transformation of Indigenous Landscapes*, 67.

41 Economist, "Asia: Cleaning-Up Time; Landmines in Afghanistan," *The Economist* 362 (Feb 2, 2002): 37-38.

42 Mines cost as little as \$3 to make but may cost as much as \$300-400 to remove in 1995 terms, according to Neil Andersson, Cesar Palha da Sousa, and Sergio Paredes, "Social Cost of Land Mines in Four Countries: Afghanistan, Bosnia, Cambodia, and Mozambique," *British Medical Journal* 311 (Sep 16, 1995): 718; According to previous Economist footnote, one cleanup estimate for Afghanistan is \$500M, yet the annual lost opportunity cost is allegedly \$720M in agriculture - math and logic imply that if there is any accuracy to these figures, willing expertise to clear mines must be limited and/or a credit mechanism does not exist to fund cleanup.

43 Saba, "Afghanistan's Natural Heritage: Problems and Perspectives."

44 Economist, "Asia: Cleaning-Up Time; Landmines in Afghanistan, 37-38.



a fifth of families were affected by a landmine casualty. Those desperate enough to try and remove a mine had four times the chance of incident.<sup>45</sup>

### **The Taliban**

The Taliban engaged in their own scorched-earth strategy in Wardak, Bamiyan, and the Shomali Plain. People of the Shomali Plain north of Kabul strongly resisted Taliban, and the area was one of the last places to be occupied in late 90s. In August 1999, the Taliban transformed the region from “national garden spot and breadbasket into a wasteland.”<sup>46</sup> Tajiks numbering 200,000-300,000 were driven out, swelling the refugee ranks.<sup>47</sup> Irrigation systems were blown up, grapevines and walnut trees burnt, approximately 800 shops destroyed and at least 5000 houses torched. The UN called the destruction “biblical in scale” and estimated a cost of billions and no less than a decade for rehabilitation.<sup>48</sup> Karzai has labeled Shomali the single worst Taliban atrocity and made recovery a top priority, though chronic lack of funds and competent staff does not give cause for optimism.

There are long term impacts from the loss of vineyards and orchards. Fruit and nut trees like mulberry, walnut, and pistachio are historically crucial to Afghan life, as they are protection against drought and vulnerability of the wheat crop.<sup>49</sup> These trees had never been harmed during tribal raids and retaliations.<sup>50</sup> Such trees require many years to root and produce a crop. The UN estimate of a decade seems overly optimistic regardless of funding.

One of the most infamous Taliban acts was the destruction of the 1500 year old giant Buddha statues in Bamiyan, in 2001. This was a precursor to attack on the living inhabitants of the area due to the fierce Hazara resistance there. The Taliban attacked the mountain villages, systematically looting and burning the houses and killing everyone who did not flee. Long term winter stores of food reserves were taken or destroyed and wells poisoned.<sup>51</sup> The marginal sustainability of livelihood in this high altitude and cold climate of this central Hindu Kush area makes such destruction all the more difficult to recover.

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45 Andersson, "Social Cost of Land Mines in Four Countries: Afghanistan, Bosnia, Cambodia, and Mozambique."

46 Marc Kaufman, "Afghans Return to Garden Spot Wasted by Taliban." *The Washington Post*, Jan 24, 2002.

47 Ibid; Saba, "Afghanistan's Natural Heritage: Problems and Perspectives."

48 Ibid.

49 Steinberg, *Dangerous Harvest: Drug Plants and the Transformation of Indigenous Landscapes*.

50 Eyewitness accounts of foreigners prosecuting the strategy (Chechens, Pakistani, Uzbeks, Arabs) may be evidence of how unsavory and unprecedented this carnage was for Afghans, even for the Taliban themselves.

51 Barry Bearak, "Where Buddhas Fell, Lives Lie in Ruins Too," *New York Times*, Dec 9, 2001.

The Taliban were also blameworthy for environmental damage due to sheer negligence or ignorance. During the drought of 1998-2002, Taliban crisis management was incompetent at best.<sup>52</sup> The drought contributed to death of 1000s of livestock, loss of crops, worsening of deforestation, and environmental refugees to add to the pool of war refugees.

### **Environmental Praise for War**

Paradoxically, the threat of violence has preserved natural areas. The Demilitarized Zone in Korea is a pristine strip of mountains, jungles, and wetlands that support wildlife absent elsewhere on the peninsula. In Congo, violence has prevented systematic timbering and mining in wilderness areas.<sup>53</sup> Swiss and Afghan conservation groups have observed that the flight of people and threat of land mines in certain areas have allowed some species of plants and animals to flourish, or at least make a comeback.<sup>54</sup> The Soviets kept troops near the Wakhan corridor, an alpine and sub-alpine area of great biodiversity in the east. Local consensus is that the Soviets did not hunt the wildlife or mistreat the inhabitants.<sup>55</sup> Fearing being mistaken as mujahudin, the locals refrained from hunting, allowing certain wildlife to proliferate; ibex and urial sheep even lost their fear of people.

### **Indirect Effects of War**

Second order effects are more important in the socio-economic sense. They include loss of environmental records and administrative expertise, a collapse of national and local institutions for environmental education and management, proliferation of weapons, opium production, deforestation, urbanization, short-term unsustainable relief measures, and underlying much of the above, transformation of a quarter to a third of the population into refugees. A 1988 Afghan refugee estimate was three million in Pakistan, 1.5-2 million in Iran, and two million internal to Afghanistan.<sup>56</sup>

Afghanistan is a multi-ethnic patchwork with a history of rivalries between groups. The Taliban era exacerbated ethnic rivalry and vendetta, mainly between Pashtuns and others – especially Hazara and Tajiks, due to brutal practices on both sides. This legacy may simmer for the remainder of the current generation, yet it is precisely the type of obstacle that may inhibit

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52 Khaleda Atta, "Drought Exigency to Add to List of Problems for Afghanistan." Lemar-Aftaab (2001) retrieved Feb 11, 2008 from <http://www.afghanmagazine.com/2001/2001.html#articles> .

53 Economist, "Science & Technology: The Spoils of War; the Environment," *The Economist* 366 (Mar 29, 2003): 88.

54 Girardet, Afghanistan, 220.

55 UNEP, Afghanistan: Wakhan Mission Technical Report, Switzerland: UNEP, 2003.

56 Weintraub "Returning Afghans Would Face Many Problems; Millions of Refugees would Need Food, Water, Housing After a Soviet Pullout."

cohesive national identity and cooperation - never more critical in order to make government and institutions work. Displacement and resource scarcity only intensify the problem. For example, in Ghazni there are daily conflicts competing over water, vegetation, and grazing.<sup>57</sup>

The total collapse of administrative institutions may be the most significant result of continuous conflict in Afghanistan. Organic mechanisms for recovery have been erased in Carthaginian terms. This is evident in the thrust of international assistance. The post-Taliban agreement in Bonn literally apportioned institutions to various countries for rehabilitation guidance. The US adopted the military, Germany the police, and so on. Extensive influence of the central government has never been characteristic, but loss of institutions at regional and local levels has hurt environmental conservation and agriculture and animal husbandry. Just as such institutions were establishing a tradition in the 1960s and 1970s, they atrophied with the invasion. Today there is little in the way of capacity for surveying rural conditions, much less designing or implementing coordinated policies, for example, optimal water release management from dams in Helmand valley. The UN Post-Conflict Environmental Assessment in 2003 was a landmark simply because it was the first reading of baseline knowledge of conditions in decades.

### **Deforestation and Erosion**

Deforestation causes erosion, which ruins arable land and causes floods and avalanches. A 1997 Salang Valley avalanche resulted from vegetation removal and killed 80 people. In 1998, in Faryab province, 20 people and 1900 cattle were killed in a flash flood along with 600 houses lost and over 7000 acres farmland damaged by loss of topsoil. These events are directly attributable to deforestation and erosion and are representative of trends around the country.<sup>58</sup> Deforestation has been severely exacerbated by war refugees, who seek firewood relentlessly for survival and overgraze limited areas. In turn, deforestation threatens to render agricultural capacity insufficient to support the Afghan population. Prior to the invasion there was a functional local level system for enforcing conservation. For example, restrictions on cutting, grazing or cultivating in pistachio forests were enforced by local forest wardens paid by district offices of the Ministry of Agriculture.<sup>59</sup>

Karzai's government currently has no capacity to replenish forests or stop timber poachers.<sup>60</sup> The Taliban may have tacitly supported illegal lumbering

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57 Saba, "Afghanistan's Natural Heritage: Problems and Perspectives."

58 Saba, "Afghanistan's Natural Heritage: Problems and Perspectives."

59 UNEP, Afghanistan: Post Conflict Environmental Assessment, 69-70.

60 Groninger, "Forestry and Forestry Education in Afghanistan," 428.

because of its link to Pakistani sources and their reliance on support from Pakistan. One 1997 estimate (observing truckload rate) was 2.5 million cubic feet of illegal lumber sold in Pakistan, with revenues largely going to half a dozen government officials in Benazir Bhutto's regime.<sup>61</sup> Today, five Afghan universities have bachelor forestry programs. In 2005, there were 100 students studying at Kabul and about 40 at Balkh University. The quality of facilities and supplies are woeful compared to western standards, even to point of non-working blackboards.<sup>62</sup>

The prognosis for Afghan forests is poor. One estimate is that it could take a century of consistent work to recover the forests to the point they were before 1980.<sup>63</sup> Since the Soviet invasion, 70-90 percent of woodlands have been lost. The 2003 UNEP assessment calculated that 4.5 percent pre-war hardwood forestland. In 2004, estimates indicated remaining cover might be as low as 0.5 percent!<sup>64</sup> Open woodlands (pistachio, juniper) covered an area about ten times that of the hardwood forests prior to 1980.<sup>65</sup> Satellite imagery indicates massive losses. Field surveys in 2003 by UNEP around Herat, Badghis, Kunduz, and Takhar confirmed that a majority of previously pistachio wooded areas were completely barren with eroded soil.<sup>66</sup> Photographs are as dramatic as those showing the border between Haiti and Dominican Republic, trees on one side and comparatively lunar landscape on the other.

## Refugees

With the documented return of two million refugees in 2002, a total of four million refugees were in country, inevitably consuming firewood and jostling for crop space.<sup>67</sup> Some have been driven to smuggling, opium cultivation, criminality, or militias.<sup>68</sup> Economist magazine labeled the refugee phenomenon the most serious long term consequence of war.<sup>69</sup> It could be the killer blow that wipes out forests and reduces agriculture capacity below subsistence level permanently. So pressing are refugee needs, even ground cover around trees (twigs, leaves, needles, etc) is often absent due to scavenging for

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61 Saba, "Afghanistan's Natural Heritage: Problems and Perspectives," Fred Pearce, "Afghanistan Faces an Environmental Crisis," *New Scientist* (Jan 2, 2002) retrieved Feb 11, 2008 from

<http://www.newscientist.com/article.ns?id=dn1733>; Ecologist, "Environmental Disaster Looms in Afghanistan," 12.

62 Ibid, 428-29.

63 Saba, "Afghanistan: Environmental Degradation in a Fragile Ecological Setting," 284.

64 Girardet, *Afghanistan*, 228.

65 UNEP, *Afghanistan: Post Conflict Environmental Assessment*, 64.

66 Ibid.

67 Pearce, "Afghanistan Faces an Environmental Crisis."

68 Fuller, "Planning for Peace," 7.

69 Economist, "Science & Technology: The Spoils of War; the Environment."

kindling.<sup>70</sup> Using UNEP numbers for annual firewood requirements per family compared to the current remaining tree density leads to a sobering mathematical bottom line.<sup>71</sup> Any greater density than one family per hectare of open woodland (overly optimistic) means that trees cannot keep up with demands.

Refugee camps insidiously encourage dependency. The Jalozei camp relied completely on aid from Doctors Without Borders. Atta suggests a growing trend of disruption of traditional cultural norms: "Dependency may irreparably fray the proud tradition of mutual-reliance, charity, and hospitality that held it together for centuries."<sup>72</sup> Such dependency is not only manifested psychologically, but physically. Afghanistan's potable water is extremely poor quality nationwide, subject to bacteria and parasites. Refugees who have lived in camps for years, or even been born there, may lose old immunities.<sup>73</sup> Journalist Robert Fiske deduced that the dysfunctional and brutal character and worldview of the Taliban regime came directly from experience growing up knowing nothing but refugee camps. Essentially their reign in Afghanistan was "rebuild[ing] their refugee camps on a larger scale."<sup>74</sup>

Assistance to refugees is typically an exercise in triage. Unfortunately, short term relief is not necessarily good for long term livelihood. For example, deep drilled wells may help some but disturb the water table and existing waterways such that life is harder for many more down the road. Not all irrigation is good irrigation; if salts aren't filtered out, the soil becomes infertile, as has occurred in the Helmand valley. Too much water can prevent oxygen/carbon-dioxide exchange with vegetation.<sup>75</sup> Hasty relief projects are subject to missing such holistic factors. The paradox is that survival strategies of people destroy the long-term source of their own livelihood, and sometimes this is exacerbated by well-intended aid efforts.

The refugee problem has contributed to urbanization. For example, pastoralists in the north, disrupted by land mines and erosion, have gravitated to Herat and Mazar-i-Sharif. Traditionally thinly populated and limited in sanitation capacity, cities today are overwhelmed in terms of water treatment, waste disposal, and pollution. UNEP estimates only 12 percent of urban populations have access to sanitary water. Saba singles out Kabul and Herat for sprawling onto surrounding fertile lands that used to feed the cities and provide

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70 Groninger, "Forestry and Forestry Education in Afghanistan," 428.

71 UNEP, Afghanistan: Post Conflict Environmental Assessment, 64, 66.

72 Ibid.

73 Weintraub "Returning Afghans would Face Many Problems; Millions of Refugees Would Need Food, Water, Housing After a Soviet Pullout."

74 Robert Fiske, *The Great War for Civilization: The Conquest of the Middle East*, NY: Vintage Books, 2005): 27.

75 Saba, "Afghanistan: Environmental Degradation in a Fragile Ecological Setting," 283.

natural water table filtration and conservation. The “ignorant” regimes since 1979 have drained the wetlands around Kabul to inhibit malaria, but this policy has compromised the vital Deh-Sabz and Char-Dehi farmlands.<sup>76</sup>

### **Opium Cultivation**

Since the fall of the Taliban, the Afghan economy has run on heroin, making up 40-60 percent of the GDP (unofficially).<sup>77</sup> One writer calls Afghanistan “history’s first opium monocrop” state.<sup>78</sup> An estimated 1.7 million Afghans directly cultivate opium, and more participate in trading, refining, and smuggling.<sup>79</sup> Poppy producers receive a very small portion of the profit, since value increases tenfold from raw opium to finished heroin.<sup>80</sup> Yet, Afghan farmers can earn five times as much on poppies compared to wheat. Abandonment of other crops results in deforested hillsides, declining soil fertility, soil erosion, water pollution and loss of expertise in producing traditional crops, which are typically combined in sophisticated mixed arrangements (e.g. shade trees around sun-sensitive plants).<sup>81</sup> There is a positive correlation between opium production and instability in Afghanistan. Opium is both causal and resultant as related to state instability. Taliban remnants apparently use opium trafficking to sustain themselves, consistent with every indigenous combatant group since the Soviet invasion.<sup>82</sup>

### **Where to Focus**

Long term sustainable agriculture techniques are needed along with functional institutions to manage agriculture, animal husbandry, forestry, and raw materials. Many excellent concepts exist, but capital investments are necessary and, aside from opium, such is a critical deficiency in Afghanistan. Continued insecurity prevents maximum external interest and assistance, and distracts domestic focus.

Ecology transcends borders and this presents both difficulties and opportunities for neighboring states. Of particular interest is water access. The Sistan basin is shared by Iran and Afghanistan and has been the subject of argument. A positive sign is the initiation of formal negotiations for coordinated

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76 Saba, “Afghanistan’s Natural Heritage: Problems and Perspectives.”

77 Girardet, Afghanistan; Amanda Roraback, Afghanistan in a Nutshell (Santa Monica, CA: Enisen Publishing, 2004).

78 McCoy, The Politics of Heroin: CIA Complicity in the Global Drug Trade, 62.

79 Girardet, Afghanistan, 190.

80 Roraback, Afghanistan in a Nutshell.

81 Groninger, “Forestry and Forestry Education in Afghanistan,” 428.

82 Declan Walsh, “Revived Taliban May Be Aiding Afghan Drug Smugglers,” San Francisco Chronicle, Dec 21, 2005, retrieved Dec 21, 2005 from <http://www.sfgate.com/cgi?f=/c/a/2005/12/21/MNG37GB5J71.DTL> ; Robert I. Rotberg,

“Sowing Afghan Security,” The Boston Globe, Jan 13, 2006, retrieved Jan 13, 2006, from <http://www.afghannews.net/index.php?action=show&type=news&id=26> .

management of the area. Iran has capital and needs water while Afghanistan controls the headwaters and needs capital. The Amu Darya is another major shared waterway. While other central Asian states continued the tradition of multilateral management after the collapse of the Soviet Union, Afghanistan has not participated. This appears to be a result of degraded institutional capacity to engage after the conflicts of the 1990s.<sup>83</sup>

In many ways sustainable land practice is traditional. People need to preserve their bio-regions because they are synonymous with livelihood. However, the unprecedented disruptions from continuous war has necessitated short term survival strategies and eroded embedded commitment to sustainable practices. The UN initiative for an Afghan Conservation Corps appears to be a model concept to balance short term relief with long term investment. Funding through the central government currently allows forestry nursery growing, replanting site preparation, planting, and maintenance. Further, the program attempts to employ the most vulnerable segments of society – disabled, widows, refugees, ex-combatants.<sup>84</sup>

Scientist Dr Alex Deghan of USAID emphasizes that “conservation is critical for recovery and stability.”<sup>85</sup> He directs legislative review, baselines wildlife populations, helps stimulate community-level management of natural resources, and helps joint conservation efforts with neighboring countries. He believes “security [is] not going to be achieved through guns” but through conservation, because the country is so intrinsically dependent on natural resources and animals.<sup>86</sup> While impressed by the average Afghan’s interest and dedication regarding education and environmental management, practical survival rules the day in many places. Besides opium and timber smuggling, unregulated trapping of birds and hunting of rare animals threatens or has caused extinction of certain species. Thanks to foreign buyers - Saudis for example - snow leopard furs fetch \$400-2000 on Chicken Street in Kabul and a live Saker falcon may draw tens of thousands of dollars.<sup>87</sup>

## Conclusion

Afghanistan’s most pressing needs are not necessarily the most important for its long term survival. Klaus Toepfer, director of UNEP states, “If we are to help deliver a stable future for this country...the environment must be factored into rehabilitation and future planning. For the environment is not a luxury but

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83 UNEP, *Afghanistan: Post Conflict Environmental Assessment*, 62.

84 Groninger, "Forestry and Forestry Education in Afghanistan," 429.

85 Stowe, "Preserving Land and Wildlife, to Restore the Afghan Identity."

86 Ibid.

87 Pearce, "Afghanistan Faces an Environmental Crisis;" Girardet, *Afghanistan*, 224-25.

the basis for economic development and livelihoods.”<sup>88</sup> In January 2006, legislation passed for first time to protect natural resources. The UN admits it will be difficult to translate into rapid practical success. The collapse of institutions during the war and weakness of central government underlies the problem.

The 2008 Afghanistan Study Group Report discusses “economic development and reconstruction,” but fails to explicitly connect this to the environment.<sup>89</sup> One unnamed European aid representative in Kabul acknowledged, “The environment is not exactly one of our priority concerns although there is no question that it should be.”<sup>90</sup> The desk officer for Afghanistan at NATO headquarters admitted that the environment was not a consideration for the operations division.<sup>91</sup> A Pakistani army general with experience combating Taliban in the Federal Administered Tribal Areas (FATA) confirmed that environmental issues were inconsequential in the context of security operations.<sup>92</sup> Yet, he reported that the most effective means in the development strategy to generate local tribal support against the Taliban was facilitating water management via wells and irrigation projects.

A potential emerging international norm is intervention in states that brutalize their own populations. As the effects of global climate change are realized, the strategic international importance of environment and ecology will increase. Is it possible that the norm on the horizon is intervention in states that brutalize their environments? The current post-hurricane crisis in Myanmar might make for an early case study.

The New American Foundation think tank observes Pakistan’s reliance on the snow pack in the Himalayas for water. Researchers predict a danger of population growth plus climate change resulting in much of the country turning to desert by 2030. Author Anatol suggests that ecological trauma arising from climatic change in the Afghanistan-Pakistan region will provide an

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88 M2 Presswire, “UN: Environmental Legislation Comes of Age in Afghanistan – New Act Signals New Hope to People, Ecology of Country,” M2 Presswire, Jan 4, 2006.

89 Afghanistan Study Group Report: Revitalizing Our Efforts, Rethinking Our Strategies, (Washington DC: Center for the Study of the Presidency, Jan 30, 2008), 35.

90 Girardet, Afghanistan, 219.

91 Per roundtable discussion with Mihai Carp (Deputy Head of Crisis Management Policy Section, NATO headquarters operations division) on Feb 27, 2008 at Naval Postgraduate School, Monterey, California.

92 Per roundtable discussion with General Hamid Khan, Pakistani Army (president of Pakistan National Defense University) on January 25, 2008 at Naval Postgraduate School, Monterey, California.



overwhelming challenge for tenuous governments and a new opening for Islamists to exploit for political gain.<sup>93</sup>

The problems that have built up over the last 30 years in Afghanistan are so intertwined that they cannot be solved sequentially and independently. As Homer-Dixon observes, "We tend to 'silo' our problems. We look at our challenges in isolation, so we don't see the whole picture. But when several stresses come together at the same time, they can produce an impact far greater than their individual impacts."<sup>94</sup> This is precisely what makes the situation of Afghanistan so immensely difficult. It is quite possible to win the military conflict but lose the country.

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93 Lieven Anatol, "Pakistani Aid Needs to Take Precedence Over Africa," Financial Times, Sep 14, 2005.

94 Homer-Dixon, *The Upside of Down: Catastrophe, Creativity and the Renewal of Civilization*, 17.