

COMMENT

THE USE OF FORESTS IN TIMES OF CRISIS: ECOLOGICAL LITERACY AS A SAFETY NET

ALAN R. PIERCE AND MARLA R. EMERY

INTRODUCTION

In his chapter entitled “Flight into the Forest,” zoologist Bernd Heinrich (1984) recounts how he and his family, Polish refugees who fled to Germany at the close of World War II, lived off of fish, game (including mice), nuts, berries and mushrooms in the forests of Hahnheide for five years. For Europeans of Heinrich’s generation, memories of reliance upon forest resources for survival during and after the war are commonplace. Use of forests for food, medicine and shelter during times of crisis is not a historical anecdote or aberration, but a present day reality for people across the globe, as reports from Bosnia-Herzegovina, Congo, Burma, North Korea, Colombia and a host of other countries make clear.

Guatemalans used forests for food and shelter during the conflict that rocked the country in the 1980s (Ball *et al.*, n.d), and today many Guatemalans in the refugee camps of Quetzal-Edzna and Maya-Tecun in the Mexican State of Campeche continue to rely on wild resources for subsistence needs¹. In Tanzania, a Congolese’s story is typical of many of his fellow refugees, “I lived in the forest with my mother for three weeks (Frushone, 2002).” In a dispatch from the Sudan, Sawyer² reported that 2,000 war-displaced refugees were “subsisting on leaves,” while a study of famine refugees from North Korea found that many had resorted to “scavenging wild foods” to survive (Korean Buddhist Sharing Movement, 1998). Three years ago, drought in Zimbabwe forced villagers to “(head) for forests to hunt for wild fruits, honey or anything edible which they could find.”³ In January of 2003, 175,000 Mozambicans faced starvation due to drought, and villagers in the southern provinces of the country were “depending on wild fruit to survive”⁴. This year, nine survivors

¹Faust, B. 2003. Personal communication. CINVESTAV (Centro de Investigación y de Estudios Avanzados del IPN, México DF) related to Marla Emery, 4 March 2003, Syracuse, New York.

²Pearce, F. 2000. From Viet Nam to Rwanda: War’s Chain Reaction. *The Courier*. Viewed online 4 March 2003: www.unesco.org/courier/2000_05/uk/planet.htm

³Mutandwa, G. 2002. Villagers Turn to Wild Fruits for Survival. *The Financial Gazette*, 19 Sept. 2002. Viewed online, 11 Feb. 2003: www.fingaz.co.zw/fingaz/2002/September/September19/2595.shtml

⁴Burlington Free Press. 2003. Nine Die of Hunger in Mozambican Village. *Wire Report*. Burlington (Vermont) Free Press, 20 Jan. 2003, 7A.

of the tsunami in Southeast Asia were found 38 days after the event in the forests of Great Nicobar Island where they had subsisted on forest resources including wild boar, coconuts and shoots⁵.

THE EXTENT OF GLOBAL CRISES

It is difficult to quantify the number of persons displaced by conflict, drought and famine each year, much less to estimate the number of people thrust into subsistence dependence upon wild resources as a result of civil and environmental upheaval. A cursory review of available statistics suggests that the number may be very large. According to the U.S. Committee for Refugees, the number of refugees crossing international borders in 2001 topped 14.5 million while the number of persons internally displaced within their own countries due to famine or conflict was estimated at 20 to 24 million (Drumtra, 2001). During 2001 alone, the same report continues, "more than 5.5 million people around the world – an average of 15,000 new people per day – fled their homes."

The Heidelberg Institute of International Conflict Research (2003) reported that there were 42 wars and other violent conflicts around the globe in 2002, the majority occurring in Africa and Asia. The U.S. Agency for International Development (2003) reports that "manmade emergencies averaged 22 a year through the late 1990s," occurring in every region of the globe, including countries such as Bosnia and Herzegovina, Colombia, Eritrea, Ethiopia, Haiti, Indonesia, the Democratic People's Republic of Korea, Sierra Leone, Tajikistan and Yugoslavia (Serbia/Montenegro).

Famine and natural disasters have increased markedly in recent years. USAID (2003) estimates that the number of water and weather related disasters doubled from 200 to nearly 400 in the 1990s. The report continues: "During 1991–95 there were three El Niño-Southern Oscillation phenomena, causing devastating droughts in Southern Africa in 1991–92, 1993–4 and 1994–5. In 1997–98 this weather pattern struck again, affecting temperatures and rainfall around the world." According to statistics posted on UNEP's (2003) website, major episodes of famine and drought in Africa have affected more than 100 million people over the last 3 decades alone.

FOREST USE IN TIMES OF CRISIS

The impact of war and conflict on the environment is being discussed more frequently in popular and scientific articles (Pearce F. 2000; Shambaugh *et al.* 2001; Hart and Hart 2003). Authors have focused on the direct impacts of conflict on the environment as well as the collateral damage caused by soldiers and refugees using forests, protected areas and endangered species during wartime. Forest use in wartime can be extremely destructive. Pearce, citing IUCN statistics, reports that civil war in Rwanda and, later, the Democratic Republic of the Congo, wrought

⁵CNN. Nine Saved 38 Days after Tsunami. Viewed online, 3 February 2005: www.cnn.com/2005/WORLD/asiapcf/02/02/tsunami.india/index.html

significant damage to the forests of Virunga National Park, where refugees and soldiers “deforested some 300 sq. km... in their search for food and wood.” “At the height of the crisis ...,” continues the report, “some 850,000 refugees were living within or close to the park and took between 410 and 770 tonnes of forest products out of the park daily.”

There is a growing body of literature on the use of wild resources as famine foods. A Purdue University website currently lists over 200 references relating to the topic (Purdue University, 2003). It is now generally recognized that many cultures have developed survival strategies that revolve around knowledge and use of wild foods and medicines, particularly those derived from forest ecosystems, in time of famine. In Ethiopia, “collection and consumption of wild plants in uncultivated lowland areas such as bush, forest and pastoral land as well as the domestication of a great variety of ... indigenous plants and trees for home consumption and medicinal use” has enabled populations to survive in a region beset by periodic food shortages (Ethiopia Famine Food Field Guide, n.d.).

A NEW SYNTHESIS: ECOLOGICAL LITERACY AS A SAFETY NET

Few authors have merged the topics of famine foods and conflict to discuss the human dimensions of resource use in times of crisis. The ability and ingenuity of humans to survive on forest resources in times of stress suggests that at least two factors have largely been ignored. First, forests, more than any other land use, provide a unique source of food, medicine and shelter during war and famine that is irreplaceable and invaluable. While it would be impossible to calculate the economic value of forest services in times of crisis, it is significant to note that no forest valuation methodologies currently in use make mention of the topic. Second, retention of ecological literacy, that is, the knowledge of how to identify, find and prepare useful forest resources, is vastly undervalued in the modern world.

Forests and forest resources provide a safety net for millions around the globe on a daily basis, particularly the poor who are ill served by the market economy. In times of crisis, the number of forest users can swell enormously. While one can decry the amount of forest destruction caused by refugees, the emphasis of criticism should rest more with the lack of political and institutional support to address refugee issues and less upon the people themselves who are forced to rely upon forest resources in times of emergency. Funding for refugee assistance has fallen, which may only fuel further forest usage by refugees. The U.N.’s High Commissioner for Refugees faced a funding shortfall in 2001 and as a result eliminated 700 staff positions and cut its budgetary appeal by \$65 million (Drumtra, 2001).

We live in uncertain times where global climate change, natural disasters, terrorism, and conflict have the capacity to disrupt or completely shut off food supplies, plunging whole populations, regardless of class, into chaos. Interviews with North Korean famine refugees (Korean Buddhist Sharing Movement, 1998) found that: “Most of the professions of people surveyed are common in urban areas and uncommon in rural areas: only 4 percent of the refugees surveyed are farmers.” Urbanites are

the least likely to retain ecological literacy and thus the coping skills necessary for gleaned wild foods in times of famine and war. De Waal (Purdue University, 2003) opines that the AIDS epidemic is particularly nefarious for rural Africans because it is taking a devastating toll on women, the repositories of traditional knowledge about famine foods that have allowed families and communities to survive periods of famine and drought. Many critics of non-timber forest products suggest that research into such products is anachronistic and nostalgic. We counter that NTFP use perpetuates ecological knowledge that can be as vital to human survival today as it was centuries ago.

REFERENCES

- Ball, P., P. Kobrak and H. Spierer. n.d. State Violence in Guatemala, 1960-1996: A Quantitative Reflection. Viewed online, 11 Feb. 2003: <http://shr.aas.org/guatemala/ciidh/qr/english/>
- Drumtra, J. 2001. 50 Years Later: Refugee Flight on the Rise, International Support Waning. U.S. Committee for Refugees. Refugee Reports, Volume 22, Number 5. Viewed online, 12 March 2003: www.refugees.org/world/articles/50_years_rr01_5.htm
- Ethiopia Famine Food Field Guide. n.d. Ethiopia: Famine Food Field Guide. Viewed online, 15 Feb. 2003: www.telecom.net.et/~undp-eue/faminefoodweb/index.htm
- Frushone, J. 2002. New Congolese Refugees in Tanzania. U.S. Committee for Refugees. Viewed online, 4 March 2003: www.refugees.org/news/press_releases/2002/122402.cfm
- Hart, J. and T. Hart. 2003. Rules of Engagement for Conservation. *Conservation In Practice*, V. 4, 1, 14-22.
- Heidelberg Institute of International Conflict Research. 2003. Viewed online, 12 March 2003: www.hiik.de
- Heinrich, B. 1984. *In a Patch of Fireweed: A Biologist's Life in the Field*. Harvard University Press, Cambridge, Massachusetts.
- Korean Buddhist Sharing Movement. 1998. Famine Witnessed by 472 North Korean Refugees Interviewed in China. Viewed online, 12 March 2003: www.kimsoft.com/1997/nk-fam98.htm
- Purdue University. 2003. Reference List for Famine Foods Database. Viewed online, 15 Feb. 2003: www.hort.purdue.edu/newcrop/faminefoods/ff_references.html
- Shambaugh, J., J. Oglethorpe and R. Ham. 2001. *The Trampled Grass: Mitigating the Impacts of Armed Conflict on the Environment*. Biodiversity Support Program, Washington, D.C. Viewed online, 12 March 2003: www.bsponline.org/bsp/publications.
- UNEP. 2003. Natural Disasters. Viewed online, 12 March 2003: www.unep.org/geo/geo3/english/453.htm
- USAID. 2003. Humanitarian Aid in the 1990's. U.S. Agency for International Development. Viewed online 12 March 2003: www.usaid.gov/fani/ch05/humanitarianaid.htm