Bethel College Mennonite Church Creation Care Committee
Creation Stewardship Notes # 18, March 2006

Cotton is the largest money-making non-food crop in the world. It was first used about 3000 BC. The word cotton is from the Arabic *qutton* or *kutn* which means the plant found in conquered lands, referring to Alexander the Great's conquest in India. By 1861, cotton had become the most important crop in world trade and 80% of it was grown in the southern United States. Today cotton is grown in more than 100 countries. However 68% of the total acreage devoted to cotton is found in just five countries that are leading producers, India, the United States, China, Pakistan and Uzbekistan. A number of African countries have increased their cotton production and cotton is the leading export of Benin, Burkina Faso, Chad and Mali and the second largest export of Sudan, Togo, Zambia and Zimbabwe.

Cotton consumption had declined to about 35% of total fiber consumption in developed countries by the early 1980's as it was being replaced by synthetic fibers. However in recent years, cotton is seen as a comfortable, natural alternative to many other fibers and by the 1990's it accounted for almost half of the fiber consumption in developed countries.

Although cotton is thought of as a natural product, its production by today's conventional agricultural practices involves large environmental impacts. The most important environmental impacts are due to the large use of agrochemicals and water. Cotton is one of the most chemically intensive crops in the world. Large amounts of insecticides, fungicides, fertilizers and defoliants (used to kill the leaves before the harvest by mechanical pickers) are used. Cotton is grown on 2.4% of the world's cultivated land but uses 11% of all pesticides (insecticides, miticides, herbicides and fungicides) each year. Cotton production uses especially large amounts of insecticides. Cotton producers use 25% of all insecticides used each year. Many of the pesticides used are extremely hazardous and pose health risks to workers, to soil organisms, to animals such as insects, birds and mammals and to downstream freshwater species.

Cotton production and processing uses a tremendous amount of water. It is estimated that cotton is grown on more than half of the irrigated land in the world and is the largest user of water among all agricultural commodities. Worldwide irrigation efficiency is less than 40% which means that 60% of the water used in irrigation never reaches the crop plants.

Cotton production today is not sustainable. It uses too much water, too many pesticides, especially insecticides, and produces too much pollution. Improved irrigation systems could reduce the water wasted from 60% to 15% or less. Israel has developed very efficient drip irrigation systems which not only reduce water use but also give the highest cotton yields. Organic cotton production would solve many of the environmental problems. There are internationally recognized standards for organic production of cotton. Organic production is more labor intensive and keeping organic cotton separated from nonorganic cotton during processing is costly. However even though the organic raw cotton is currently more costly to produce, the cost of the raw cotton is only a tiny percentage of the cost of cotton textiles.

Some cotton has been grown in Kansas for a number of years. There are some advantages to growing cotton in Kansas. Since it is at the northern edge of the range for growing cotton, some insects are not a problem and fewer insecticides are required. Also defoliants are not needed since frost kills the leaves.

Another problem is the govcrnment subsidies that distort the market. US government price support subsidies account for up to one-half of the income of cotton farmers and encourage overproduction. The world market price becomes so cheap that it squeezes the farmers in poor

countries whose governments cannot pay subsidies. One 40,000 acre Arkansas farm receives subsidies equivalent to the average income of 25,000 people in Burkina Faso. Subsidies help keep US farmers in business but, as they are currently designed, they do not help solve environmental problems. They could be used to achieve conservation objectives if they included requirements for improved practices, such as more efficient irrigation or adoption of an integrated pest management (IPM) system to reduce pesticide use. IPM systems depend upon cultural, physical and genetic control of pests with targeted use of least toxic pesticides as a last resort.

Since they can't compete with subsidized cotton production by conventional methods, some farmers in Burkina Faso are trying organic production as a viable alternative. There were 72 organic cotton farmers in Burkina Faso in 2004 and there are now 663. Organically produced cotton represents less than 0.1% of world cotton production. Turkey is the leading producer and in the US, Texas produces the most organic cotton. However consumption of organic cotton has been increasing and the farmers in Burkino Faso hope this trend will continue. We as consumers can encourage the adoption of more sustainable methods of producing cotton by buying textiles made of organic cotton or with some content of organic cotton whenever possible. The National Wildlife Federation has a line of t-shirts made of organic cotton. Some manufacturers are developing lines of organic cotton clothing. There are many websites that are sources of organic cotton textiles and of information on organic cotton. A few of these websites are:

1. Care What You Wear Program of the Sustainable Cotton Project www.sustainablecotton.org
2. Directory of sources for organic products www.greenpeople.org/OrganicCotton.htm
3. Patagonia www.patagonia.com/enviro/organic_cotton.shtm
4. Eartheasy http://eartheasy.com/wear_orgcot_clo.htm

Buying used cotton clothing and textiles from recycled cotton also are important ways to reduce environmental impacts.

--Written by Dwight Platt with information from:

1. Clay, Jason. 2004. World Agriculture and the Environment. Washington, DC: Island Press, xii + 570 pp.
2. Cubie, Doreen. 2006. "Pick Your Cotton." **National Wildlife** 44(2):14-15.
3. Eshelby, Kate. 2006. "Organic Cotton." **Ecologist** 36(1):34-39.