



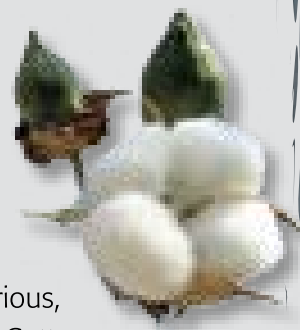
4. Adapting traditional tools

Some CHAPS projects examined tools that were used in different types of livelihood activities in an effort to find ways to protect the health of those who used the tools. In some cases, tools were very basic and had been used throughout generations; in other cases, tools involved detailed machinery and were more recently developed. At the time they were developed, these technologies may have been very advanced; however, many were in need of being adapted to preserve the health and safety of those who use them.

Often times, a tool may be strongly tied to cultural identity. For this reason, it may be impossible for community members to imagine their lives without the tool. The following stories show how CHAPS grantees worked with community members to find ways to use technology to improve upon traditional tools.

Making cotton carding safer

Cotton carding is an ancient activity in Egypt. Using a cotton carder, workers process and clean cotton that is then used to fill pillows, mattresses, and upholstered furniture. Unfortunately, the large amounts of dust that are produced during the process can have serious, damaging effects on workers' breathing and respiratory systems. Cotton carders do not typically wear masks during the process and thus are highly vulnerable to negative health effects caused by breathing in the cotton fibers. Many carders suffer from chest diseases and allergies and are often forced to stop working because of deteriorating health. Also, cotton carding machines create a great deal of noise, which negatively affect the hearing of workers.



The Central Association for Developing and Promoting Environmental Technology (CADPET) applied for a CHAPS grant because it felt it was important to update the cotton carding machines to be safer. Unlike many other CHAPS grantees, CADPET used technology to modernize cotton carding machines. Like Dr. El Hofi, who encouraged

Mulad sugar doll makers in Egypt to use safer, more modern methods of making sugar dolls, CADPET tried to make the traditional practice of cotton carding safer and healthier by using technology.

CADPET began by conducting research on how the machines could be changed. By bringing together cotton carders, engineers, and scientists, CADPET members led the development of a new machine. This machine was fully covered—to prevent dust from escaping and being inhaled by carders—and the internal mechanics were changed to reduce the noise produced by the machines. This design also reduced the risk of workers being injured by exposed machine parts. After producing a model machine, CADPET used its own funds to manufacture 14 additional machines for workers.



Recognizing that it would not be able to replace all of the cotton carding machines, CADPET knew it would need to educate cotton carders about how they could reduce their risk of respiratory illness while working on older cotton carding machines. After conducting discussions with carders about how they used the machines, CADPET developed suggestions that would help protect carders. CADPET held educational sessions with carders to teach them about the health risks associated with cotton carding machines. It also gave masks to workers to use while they sewed and shaped mattresses and pillows. Through this project, CADPET promoted a safer working environment and improved workers' understanding of the risks involved in cotton carding as well as ways to reduce these risks.

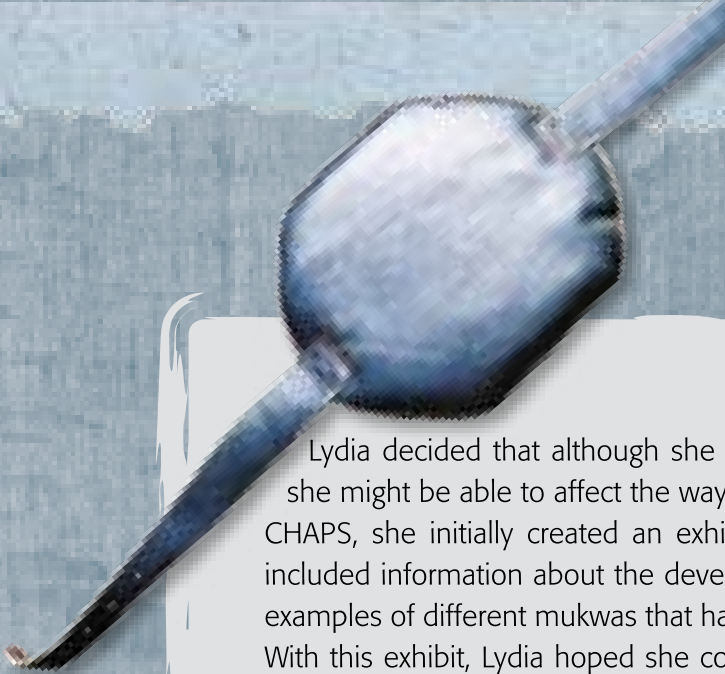
Adapting tradition, creating dialogue

In the central highlands of Kenya, women from the Gikuyu tribe are responsible for many household chores, including collecting water and gathering firewood. In order to complete these chores, women typically use a mukwa—a leather, sisal, or synthetic strap that is placed around the forehead, allowing the load to be carried on the back. A girl receives her first mukwa as early as the age of five and receives another when she is married to symbolize her transition into womanhood. Thus, the mukwa is not only seen as a useful tool, but also signifies coming of age.

Lydia Kariuki, a local resident, was worried about the negative impact of the mukwa on the health of women. She began to conduct research with community members about the effects of using the strap. She found that the use of a mukwa had serious effects on women's health, ranging from mild, such as lower back pain and headaches, to more serious, such as a groove in the skull or miscarriage.

In contrast to the response CADPET received from cotton carders, Lydia found that women were not willing to make big changes to or to give up their mukwas. Nyawirah Mwai, an elderly woman, told her, "Mukwa is a matter of life and death. You use it or perish. It is the only way women can transport any weight. Nothing can separate us from this intimate friend." Wachera Muchemi, a local nurse, said that she sees many female patients who are suffering from mukwa-related injuries. She said that women just adapt and learn to live with the pain, because they have to work.

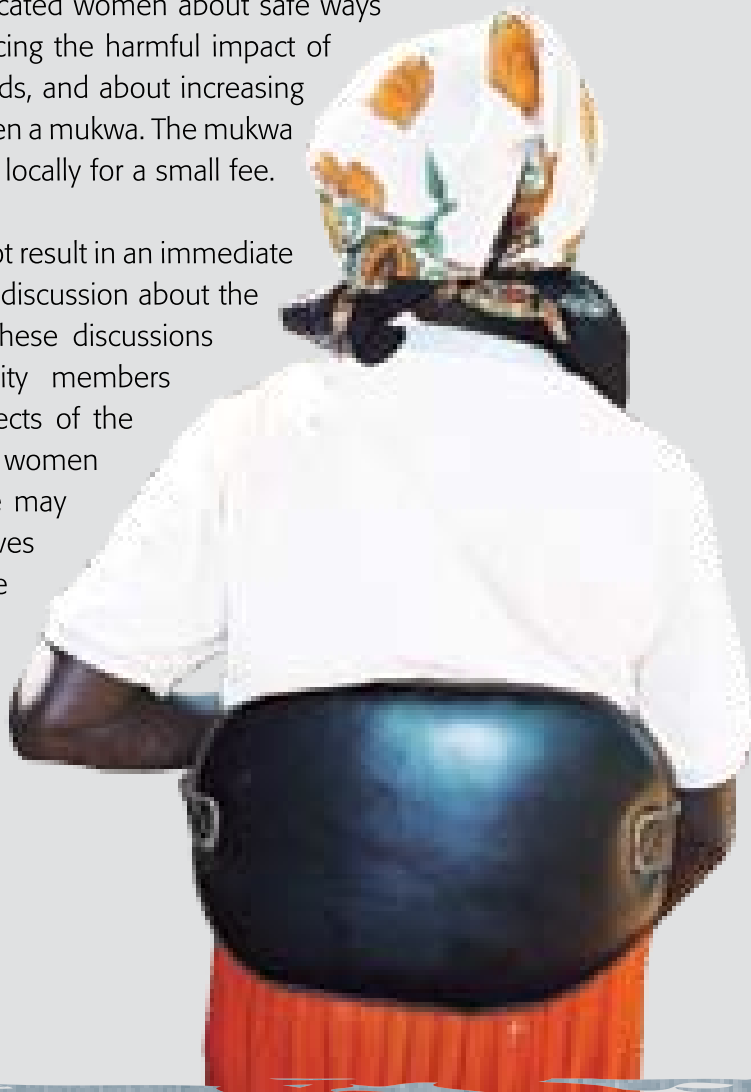




Lydia decided that although she could not stop women from using the mukwa, she might be able to affect the way they used it. Using money given to her through CHAPS, she initially created an exhibit about the mukwa at a local museum. She included information about the development of the mukwa, photos of it in use, and examples of different mukwas that had been used in the local area through the years. With this exhibit, Lydia hoped she could help women and children in her area learn about the potential negative effects of using a mukwa.

Next, Lydia met with local women to learn more about how the mukwa could be adapted so that it was more comfortable and caused less pain and injury without changing its ability to be used or its cultural importance. From these discussions, the idea of creating back and head pads for the mukwa was born. Women tried out the wide variety of pads as they were developed. Similar to the work of CADPET with the cotton carders, Lydia educated women about safe ways to use a mukwa, about reducing the harmful impact of mukwa by carrying lighter loads, and about increasing the age at which girls were given a mukwa. The mukwa pads are now sold to women locally for a small fee.

Although Lydia's project did not result in an immediate change, she helped promote discussion about the dangers of the mukwa. As these discussions continue, and as community members continue to examine the effects of the mukwa on the health of local women and children, a larger change may eventually occur. Lydia believes that this change will come. "We are introducing a new culture to these people," she said. "Much time will be needed to make a significant impact. But we shall do it."



Reflection questions ?

Now that you have read the stories behind some CHAPS projects dealing with traditional tools, think about how they are similar to situations within your own community. It may be helpful to ask yourself the following questions:

- Can you think of a tool in your community that has been used for generations, but which has not been changed or adapted? How would you adapt this tool to fit with today's needs?
- Are there certain chores in your community that are reserved for only women or only men? How do the tools that women and men use to complete these chores differ?

