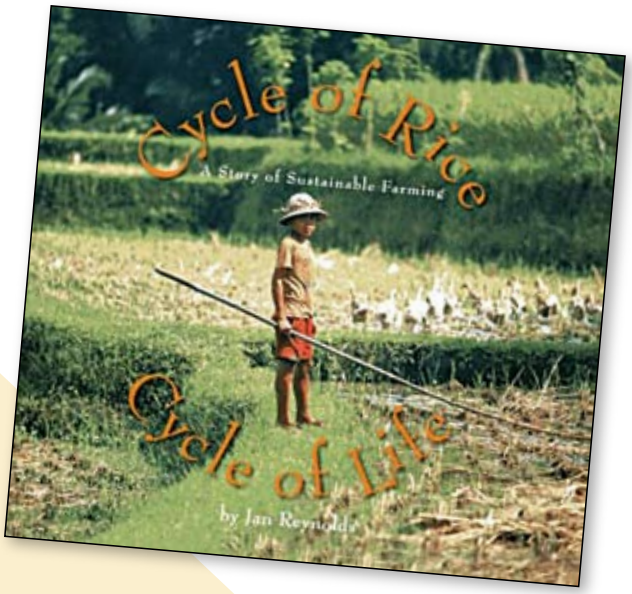
In the Spotlight

Grades 4–6

by | Sharron L. McElmeel

Cycle of Rice, Cycle of Life: A Story of Sustainable Farming by Jan Reynolds. Lee & Low Books, 2009.



Sustainable Farming—Rice, Rice, Rice

Everyone I know eats rice. Rice is prepared plain (sticky rice); mixed with meat; vegetables, nuts, and spices, or topped with spicy sauces made of red beans, curry, and more. Rice is the main ingredient in appetizers, entrées, and desserts. My friend who grew up in Okinawa tells of special coming-of-age birthdays where rice in colorful hues graced the table of food for the celebration. The production of rice is crucial for the feeding of the world population. Over three billion people (approximately 50% of the world's population) depend on rice for their survival.

All about Rice

Further information about the importance and production of rice can be found on the International Rice Research Institute's Web site at *www.irri.org*. From there, visitors can navigate to information about the research and production of rice, as well as access pages with rice recipes. Of special interest will be the frequently asked questions page at *www.irri.org/about/faq1.asp*.

But this book, *Cycle of Rice, Cycle of Life: A Story of Sustainable Farming,* is more than a story of growing rice, or the importance of rice to many cultures. It is the story of a centuries-old method of farming, and ancient traditions trumping the best ideas of contemporary experts. It is the story of how modernization almost destroyed a thriving agricultural endeavor that had endured for thousands of years. It is the story of the importance of cooperation and community in the success of agriculture in Bali, and the story of one man's efforts to restore that tradition, even when others did not share his vision.

The majority of rice that the world consumes is grown in Asia. Many countries grow more rice than the small island of Bali, but few produce more in terms of geographical area. Although Bali is surrounded by water, the resource is still in short supply. Salty seawater cannot be used for agricultural purposes, so the Balinese rely on rainwater and the few streams that supply fresh water to the island.

Thousands of years ago, the people of Bali recognized the importance of fresh water and built temples to honor the gods for providing them with the life-giving resource. A pyramid of temples was erected, and the community came together to honor the gods and the precious water, and to celebrate with rituals.

These ceremonies served several purposes. They provided a forum for community members, who had to share the water, to get to know (and respect) one another. They provided an opportunity to establish a protocol for the sharing and maintaining of the water system, and they served as a reminder that others depend on the common water source.

The cooperation that these gatherings fostered enabled the development of complicated water schedules for planting and fallow time, based on when individual families (and their fields) would receive water. The fallow time (when the fields were not planted or actively growing rice) allowed for the farmers to use ducks to rid their fields of insects, pests that if allowed to multiply would threaten their future crops.

Using this ancient rationing system, Bali became known for its level of rice production. For a time, Bali was the "best rice producer in Indonesia." But soon, it was to become the worst.

The transformation came about when, in the 1960s, the Balinese government decided that it would make Bali an even better producer of rice. The government agreed to participate in the Green Revolution, which encouraged greater food production with new growing techniques, hybrid grains, and the use of pesticides. Instead of following the pattern of alternating planting times with fallow times, Balinese farmers were asked to plant as much, and as often, as they could. The government spent millions of dollars building new water systems, irrigation ditches, and new dams to control water flow.

In short order, the water rituals were abandoned and the ancient water temple system went into chaos. Community ties were broken. The established cycle of life was broken, too; there was no fallow time for the soil to build itself up again. To keep the soil fertile, heavy chemicals were used, which ruined the water supply for human consumption. Insects became resistant to pesticides and began eating much of the annual crop. Rice production actually decreased. The government-imposed Green Revolution was a disaster.

During this era, American anthropologist J. Stephen Lansing began to recognize the importance of the previous system's social and ecological networks, and how the lack of that ancient structure was actually harming rice production. Lansing knew something had to be done to restore the quality and level of rice production that Bali had once enjoyed. He decided to use his own modern innovations to convince the government that the methods using hybrid rice and chemicals were not good for Bali, and that huge crops were never going to result. He asked others to help him.

Lansing and his team created computerized animations of the successful "pulsing" system of water supply (allowing a fallow period of time), and its superiority to the static system that kept the fields flooded year-round. Eventually, his presentations and his tireless efforts to convince officials brought about the restoration of the water temples (and the officiating priests), and the rituals of crop planting and water sharing. Because much devastation had already taken place, the restoration of Bali's traditional methods has not been immediate. Still, it is is well on its way. Not only did Lansing help with this reversal, he also helped to make others aware that social traditions can serve more than one purpose. The Bali experience has created widespread efforts throughout the world to thoroughly assess all elements of traditional farming methods before imposing modern technologies.

Jan Reynolds has told an amazing story in *Cycle of Rice, Cycle of Life: A Story of Sustainable Farming*. Photographs provide readers with a glimpse of life in Bali: the majestic mountains, the intricate water system with its levies and dams, beautifully and elaborately dressed Balinese carrying trays of luscious fruit and flower offerings for

Green Revolution

Norman W. Borlaug (1914–2009) is known as the father of the Green Revolution. While his innovative agricultural methods did save thousands, if not millions, of people from starvation, the efforts seemed most successful in those countries where production of wheat or rice was not at all successful. The failed efforts in Bali seem due to the disregard of what was already working, and to the implementation of new approaches without a thoughtful assessment of the entire structure of production. Learn more about Borlaug and his successful work on the Nobel Prize Organization's site at *nobelprize.org/nobel_prizes/peace/laureates/1970/borlaug-bio.html*. Norman Borlaug died in September 2009. *Norman Borlaug: Hero in a Hurry* by Lora Swanson (BookSurge, 2009) may provide more information for interested readers.

the rituals, workers growing rice in the flooded fields, and fields during the fallow season. The ducks that forage for insects, thereby protecting the future crops from infestation and destruction, are shown waddling through the fields. Bali is depicted as the beautiful island, and its rice production is thoroughly explained as an example of sustainable agriculture. The final double-page photograph of the sun setting over Bali is breathtaking.

In the Classroom/Library

This nonfiction book is one of those titles that requires thoughtful reading. Use Reynolds's book to introduce young learners to Bali and Indonesia. Start by sharing some facts about rice and its importance in the world. Locate Bali as one of the Indonesian Islands in the Pacific Ocean south of Malaysia and north of Australia. A map is appended to the author's note at the end of the book. Read *Cycle of Rice, Cycle of Life: A Story of Sustainable Farming* aloud, section by section, and discuss to facilitate understanding of the cultural material presented in the book. The author's note also includes Web sites as learning extensions. Updated URLs (and some additional resources) are included at the McBookwords site featuring *Circle of Rice, www.mcbookwords.com/books/circleofrice.html.*

After reading the book, these are topics you may wish to explore: geography, production of rice, government of Bali today, Green Revolution, Life of Norman Borlaug, Life of J. Stephen Lansing, family and cultural traditions, and efforts in other parts of the world to increase food production.

Also, consider creating a class book of family rice recipes and sharing rice dishes together. For templates to use to collect the recipes and stories that might accompany them, use the "Family Stories" templates available at *www.mcelmeel.com/curriculum/familyrecipe1.pdf* and *www.mcelmeel.com/curriculum/familyrecipe2.pdf.*

Further Reading

- *One Grain of Rice: A Mathematical Folktale* by Demi. Scholastic, 1997.
- *Everybody Cooks Rice* by Norah Dooley. Houghton Mifflin, 1995.

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Sharron L. McElmeel *is the director of McBookwords, a literacy organization, and an instructor of children's and young adult literature at the University of Wisconsin-Stout. Her latest book is* Picture That! From Mendel to Normandy: Picture Books and Ideas, Curriculum and Connections—for 'Tweens and Teens. *(Libraries Unlimited, 2009). Visit her Web site at* www.mcelmeel.com.

About the author: Jan Reynolds

In addition to being an athlete and adventurer, Jan Reynolds is an author and photographer who traveled to Bali to research the rice production on the island. Reynolds's Web site, *www.janreynolds.com,* has links to a YouTube video (in three parts) that shows more about sustainable rice farming on the island. Reynolds has traveled and researched books about life in Mongolia, the Sahara, the Amazon Basin, the Arctic Circle, among the Tibetans in the Himalaya Mountains, and on Bathurst Island off the north coast of Australia. In her book, *Celebrate Connections Among Cultures,* Reynolds also connects many of these cultures to one another (and to families in the United States) through their festivals, celebrations, and other traditional events. Visit Reynolds's Web site, and her pages on her publisher's site at *www.leeandlow.com/books/366/hc/cycle_of_rice_cycle_of_life_a_story_of_sustainable_farming* for more information.