Agricultural ceremonies stay the hand of entropy, transform mud into rice, and sustain an agrarian society in Southeast Asia

The Golden Waterworks: Toraja Rituals of the Wet-Rice Landscape

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On the southwestern "petal" of Sulawesi, Indonesia's orchid-shaped island, the highland Toraja people have practiced the arts of wet-rice cultivation for centuries. For Toraja elders and ritual priests, the mystery of this landscape is "the transformation of mud into rice" or how, in our words, seeds become food-producing plants. For this Western observer, the central question was how, in a society without written script, tape recorders, or floppy disks, memories of this agrarian and ecological system were retained and conveyed to generations of preliterate farmers. I was to discover one answer in Toraja agricultural ceremonies.—C. Z.

The unmistakably elegant patterns of flowing water, monumental earthworks, and green plants of the wet-rice landscape are inscribed on the earth's surface throughout the Far East, from Japan and China to the Himalayas. Wet rice is cultivated in India and Sri Lanka in South Asia, and on Southeast Asia's mainland, in Burma, Thailand, Kampuchea, Laos, Vietnam, and Malaysia. The anonymous calligraphy of wet-rice farmers is impressed upon the environment of the Philippines and across portions of Indonesia's 3,000 islands, from Sumatra to Sulawesi. Scholars now believe that rice (*Oryza sativa*) was domesticated in Southeast Asia more than 7,000 years ago.

The structures of the wet-rice landscape, including irrigation systems and water-holding fields or terraces, are more than environmental inscriptions with an ancient lineage. Rice currently supplies half the diet of the world's population, accounting for more than 11 percent of the world's arable land. Before high-yielding rice varieties and commercially produced fertilizers were introduced in the 1960s, traditional techniques of water control and landscape management had provided Asian populations with food for more than 50 centuries, yielding between 1 and 1.5 tons of rice per hectare.

The cultivation of rice is based upon a fit between the structure and adaptive capacities of the rice plant, and the manmade landscape. Although most plants cannot grow in water-logged soils, rice, originally a swamp weed, prospers under such conditions. According to M. S. Swaminathan, Director General of the International Rice Research Institute in the Philippines, rice can grow in flooded fields because it has "an efficient passage from shoot to root," permitting the flow of essential oxygen.

The genius of wet-rice cultures—the creation and maintenance of a rice-producing landscape—is based on a web of cultural, social, and ecological relationships. Water from streams, springs, and rainfall is channeled to and through a network of interlinked fields. The environmental centerpiece of this system is the terrace: a field ringed by water-holding retaining walls, or bunds, made of rock or earth. Rice terraces are holding ponds through which the flow of water can be regulated, bathing growing plants in a broth of nutrients.

The wet-rice landscape is not an environmental "given," but a cultural construction which must

In preparation for planting, a rake is dragged across a field which has been turned with iron-tipped spades, To' Dama'. Photograph by T. Volkman.

be conveyed from generation to generation of cultivators. Without both a memory-like "vessel" in which environmental understandings and values are stored, and a means of communicating this knowledge, the structure of the wet-rice landscape would have been obliterated by the passage of time and the movements of water. Environmental "information," like the landscapes it informs, erodes without the integrating structures of memory. Without memory, individuals, cultures, and cultured landscapes lose their forms, dissolving into an entropic runoff of priceless information.

The Toraja Wet-Rice Landscape

For many of the 330,000 Toraja people who inhabit the mountainous hinterlands of South Sulawesi (formerly Celebes), Indonesia's orchid-shaped island, the arts of wet-rice cultivation are essential for daily life. Rice is cultivated in a score of varieties, including red, white, purple, and black, in irrigated terraces that lace the Toraja landscape.

Preparation of the land begins in September as men turn over clods of earth in fallow fields and repair terrace walls. In November, water from the mountain watershed is channeled into the majority of the terraces, and men break up the clods with their hands and feet; occasionally, to further prepare the soil, they use water buffalo to draw rakes across the bottom of water-filled terraces. At this time, seed is broadcast in nursery beds scattered throughout the landscape.

In January, seedlings are transplanted from the nursery beds to fields where the rice grows until it is "pregnant." When stalks of maturing rice bend with heavy fruits and the interior of each grain is hard rather than milky, it is time for harvest. Women and children from the surrounding region converge on the fields to begin the lively labor of severing rice from its stalk. Sheaves are piled in tawny stacks, sun-dried, and carried by men to villages on mountain slopes above the terraces.

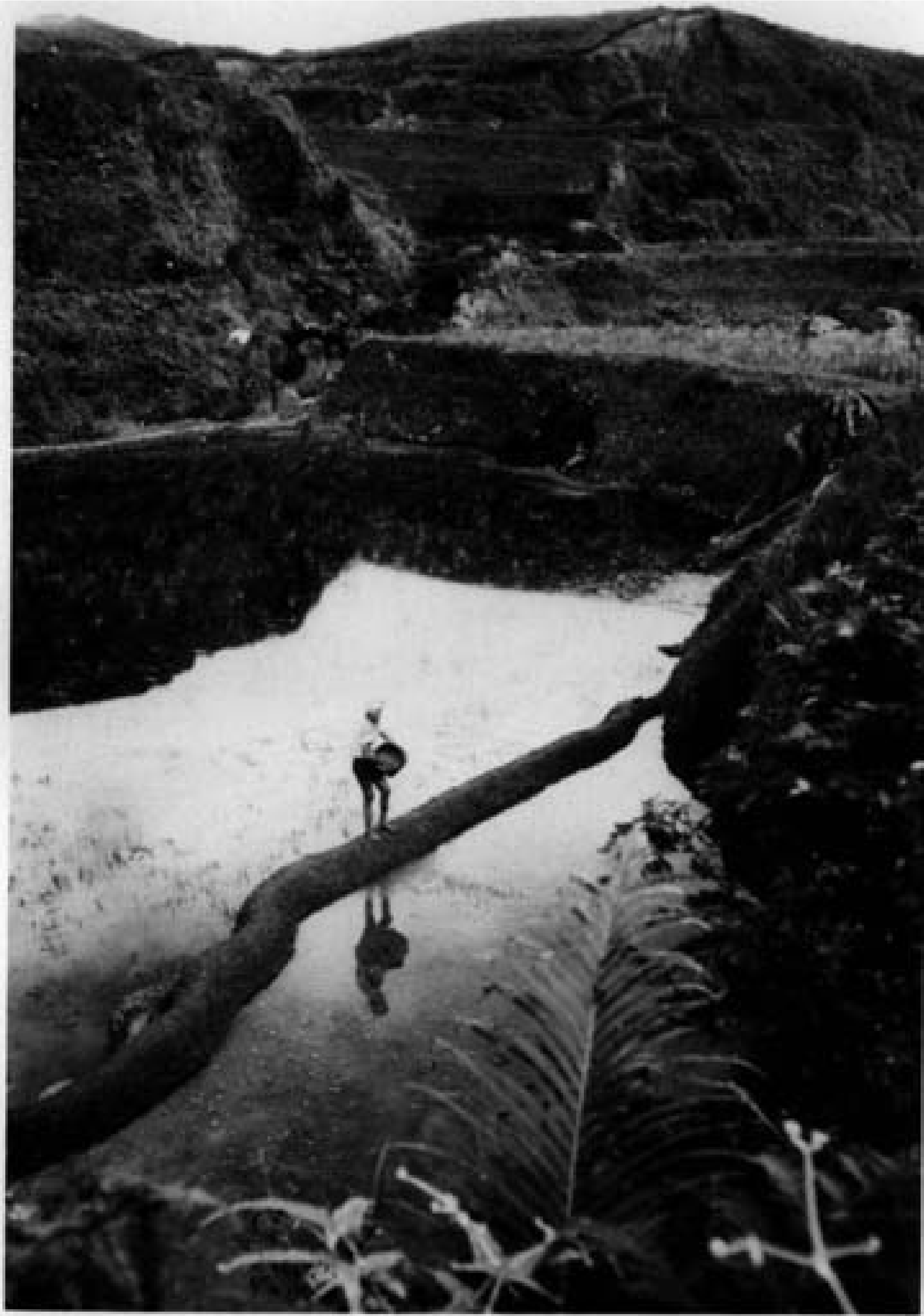
For centuries, the Toraja have practiced the arts of wet-rice cultivation. How have memories and images of landscape-making and watershed management been preserved? How has knowledge of rice cultivation been inscribed within the hearts and minds of each succeeding generation of highland farmers? Simple observation by each generation plays a major role in perpetuating this landscape, of course, but observation alone cannot account for the conservation of the wet-rice environment. The social organization of labor, the timing of cultivation practices, and the regulation of the irrigation system require some means of storing, integrating, and periodically representing information about the landscape.

Before the Dutch extended their control over South Sulawesi in 1906, the Toraja, like many other highland peoples of Southeast Asia, were a relatively isolated, preliterate people. *Aluk to Dolo,* or "Customs of the Ancestors," the Toraja indigenous religion, informed both ceremonial and everyday acts. Rice ritual or *aluk pare*, constituted a distinct sphere of ceremonial life. These affirmative ceremonies, associated with the rising sun and the growth of plants, were conducted by ritual specialists called *to minaa*, "The Wise Ones," and *indo' padang,* "Mothers of the Land," with a prodigious knowledge of myth, custom, and ceremonial speech. These masters of ceremonies inaugurate crucial phases in the calendar of cultivation.

Rituals of the Watershed

In September 1978, on the craggy slopes of Mount Sesean, towering 6,000 feet above a terraced landscape, five Toraja men make their way up a mountain ridge. They leave behind their village, Stone Drum, its carved rice granaries and fallow fields, and walk through a cool forest of dense bamboo. They climb past the last remaining

To Minaa [Wise One] Tandi Datu broadcasts rice seed into a nursery bed, Mount Sesean. Photograph by T. Volkman.



Newly transplanted rice seedlings, Mount Sesean. Photograph by T. Volkman.

houses and small vegetable gardens of onions, potatoes, and Arabica coffee trees, and emerge on a clear, forestless ridge where there are no signs of habitation or cultivation In this windswept region of streams and fast-moving mists, they begin "Going Up the Mountain," the first preplanting ritual of the cultivation cycle, by making offerings.

Tandi Datu, a Wise One, and four Mothers of the Land carry offerings of palm wine, glutinous rice, and a small, squealing pig. The Mothers of the Land are leaders of cultivation ceremonies on Mount Sesean. As one prepares offering plates of banana leaf, and another sacrifices the baby pig, Tandi Datu chants, inviting the spirits of rice and the land to descend, to partake of the offerings, and to bless the coming planting of rice. The chant is called "Caring for the Mountain," and this is the first of a series of rituals that emphasize the importance of the natural watershed and the irrigation system. These ceremonies mark and bless the places where rainwater collects, mists condense, and springs well up from the ground. According to Tandi Datu, these rites of the watershed are "the foundation for rice planting."

After the ceremony high on Mount Sesean, the Mothers of the Land make offerings at sites on lower slopes, at springs, waterfalls, and individual rice fields. There, spirits are invited to partake of sticky rice steamed in coconut milk and roasted in green bamboo containers. As water is channeled into the rice terraces below, it is honored in ceremonial poems as part of the Toraja "family bamboo clump":

Different are the requests of the spring
Distinct are the desires of the waterfall
The wishes of cool pure water
—*To Minaa* Lumbaa of Buntu Tagari village

The complex of preplanting rites on Mount Sesean are called *medatu.* These ceremonies frame the landscape, marking places, or nodes of importance, in the natural and manmade environment. Following the ceremonies of the mountain, which honor places along the path of water to the rice fields, the second phase of *medatu* honors the journey of rice seed from the village granary to the nursery bed.

At Stone Drum, the Mothers of the Land gather crucial implements of cultivation: iron-tipped spades. These implements are employed to form and maintain the productive landscape, shaping terraces from mountain slopes, constructing terrace walls, and creating channels for the passage of water. A ritual practitioner lays the iron-tipped tools on a mat and sacrifices a baby chick in a ritual called "Cleaning the Water Diversion Canal." As the Wise One daubs iron tools with chick's blood, explicit connections are made between manmade instruments of cultivation, the water-procurement channels, and the prosperity of the wet-rice community. Like the borders of the mat of woven blue–green reeds on which the tools are set, this landscape ceremony focuses and frames the field of perception. Ritual compositions, like landscape paintings, create miniature fields: environmental fragments referring to larger landscapes of meaning and topography.

The Moral Compact of the Wet-Rice Cultivator

On the day seed is to be broadcast, Tandi Datu calls the spirits to his household. His words, couplets of imagaic speech, express his hopes for full fields of rice, growing "as thick as scallion leaves." Tandi Datu's prayer is more than a list of aspirations. It is an exchange: in return for "food and fruits wherever we will go," and a harvest "visible in a big pile," Tandi Datu tells the spirits "we will always worship you and deeply respect you." He utters a "firm promise," an oath that is "strong and walled with stone," "roofed with silver and walled with gold," to remember the spirits and perform their rituals, "a rule for life for mankind and all his creation." If the community of cultivators remembers the ritual performances, then "all ancestors" are awakened. In a state of heightened attention, the spirits, "guardians of the three stalks of *padi,*" ensure the fruitful cultivation of rice. This is the moral compact of the Toraja cultivator and the spirits of the landscape:

Spirits whom I call and I invite with kindness
I make a corral for water buffalo which you enter and surrender rising and falling.

You will eat the rice we give to you with the side dishes
And after you eat, you will chew *kalosi* and *sirih* water in the mouth
You will spit far with pleasure.

You will accompany us in the working of the rice fields until we obtain the fruits
And you will make them multiply and become much during the night and the day.

We will always worship you and deeply respect you every time
To bless this *padi* and make it fertile
And the roots will never impede the growth/freedom
And the leaves will grow as thick as scallion leaves
And the fruits will be visible in a big pile, even that!
And all the rice fields will be ringed by heaps of *padi* that are even
And we will always be strengthened with this food and fruits wherever we will go.

And I will always promise with a firm promise the same as all these words
The promise which is strong and walled with stone that will protect
Roofed with silver and walled with gold

And you, people we consider ancestors
And Puang Matua, the forger-spirit who gives a decree
A rule for life to mankind and all his creations
And will be made visible all kinds of forms
Awakened all ancestors
As guardians of the three stalks of *padi.*
—*To Minaa* Tandi Datu of Stone Drum village, Mount Sesean

Later that morning Tandi Datu, like many other farmers on the slopes of Mount Sesean, carries new seed to the nursery bed. Stepping onto the muddy-red terrace wall, with deft movements of his right hand, he scatters handfuls of seed. As seed strikes the water, shattering its mirror-perfect surface, another cycle of growth has begun. For the next nine months, until harvest, the attentions of cultivators and ritual practitioners will be focused on the water-filled terraces.

Across the terraces another plant, the water fern azolla, also grows, covering the fields with a green, moss-like cap. Although nitrogen constitutes about 80 percent of the earth's atmosphere, most plants cannot use it in its gaseous form. In wet-rice terraces, azolla, in symbiosis with the blue–green alga *Anabaena azollae*, produces a steady supply of nitrogen in a usable form, ammonium. When the rice fields are drained after harvest, nitrogen from decomposing azolla is absorbed by terrace soils.

The critical role of azolla has not gone unnoticed by the wet-rice farmers of Asia. In Vietnam, for example, a temple was erected in honor of azolla. Ritual verses suggest that the Toraja too knew of the importance of water fern in the wet-rice landscape:

> Hail to thee wet-rice field, with duckweed as a sunshade,
> Abundant be the blessings upon the *sawah*, full of spear-shaped water plants.

It is possible that the "sunshade of duckweed," more accurately translated as "moss," represents the mantle of azolla growing upon the surface of each terrace. For the Toraja, as for many Asian peoples, the sunshade is a sign of respect, status, and power. High-ranking Toraja were, in former days, shielded and honored by ceremonial umbrellas made of palm leaves. Toraja "big-men," or leaders, are likened in ritual verse to tall trees and immense umbrellas that protect a multitude of followers. The sun-shaded Toraja rice terrace of ritual verse is a noble presence in Toraja memory and landscape: it encapsulates ecological, cultural, and aesthetic wisdom within a single seed of multiple meanings.

Ceremonies of the Harvest

Harvest ceremonies mark the paths of rice in its journey from individual fields to family hearths, focusing attention on its transformations and on the social orchestration of cultivation. In late June, the sounds of handmade windmills can be heard in the fields. Startled flocks of crows and other *padi* birds take flight at the sounds of school children walking home on rice-*padi* paths. When mature rice plants bend with the weight of full kernels, it is time for preharvest rituals.

To Minaa Lumbaa, the ritual practitioner, stands in the corner of his field and chants:

> God who laid out the rice fields
> lord who spread out the broad plain
>
> God who delineated the offering places
> one after the other in the rice fields
> lord who marked out the places on the ground
> where the fragrant grass is burnt

Lumbaa cuts a handful a new rice and returns to his village, where women conduct rituals at the places and for the processes of transformation which they alone control: for the mortar log (where rice is separated from the stalk); for the winnowing trays (where the grain is separated from the chaff); and at the hearth, center of the Toraja household and the site of a most fundamental transformation: becoming food.

In a silent ceremony, Lumbaa's wife, like other women on the mountain that evening, grasps two ears of newly cut rice in her hand and touches the three hearthstones, the clay cooking pots, the coconut-shell water dipper, the large and small rice spoons, and plates. The two stalks of rice are given a name, "The Ears of the Hearth," and are hung like Christmas stockings above the cooking place.

Like the cursor of a computer screen, or the dotted line of an animated map that links points in a landscape itinerary, the actions of Lumbaa's wife illustrate certain ways in which ceremonies communicate information: through gesture, mime, and pointing. Her wordless, eloquent gestures emphasize and consecrate important places of the hearth.

Harvesters at work in the early morning, Mount Sesean. Photograph by the author.

Men carrying bundles of *padi* on bamboo poles and in baskets, Mount Sesean. Photograph by the author.

The path of rice on the ritual map then moves to the "Meeting Place," the field where the major preharvest ceremony is conducted. This ritual clarifies, through the movements and exchanges of rice, the vital relations of reciprocity between cultivators, among villages in the region, and between the entire landscape-community, "Those of One Ritual-Celebration," and the spirits of the land.

At the preharvest ritual, women lade steaming heaps of new rice from their family fields into a single basket. The pooled rice of the community is spooned out on banana leaves, folded into conical packets, and fastened onto an altar. Palm wine, spirits for the spirits, as well as slices of pork, are also offered for spirits, ghosts, and ancestors. The altar stand and its gifts are a temporary architectural embodiment of an invisible hierarchy.

The Rice Dispersed, The Gift Returned

Lumbaa calls forth the spirits from their dwelling places, from the skies, from the springs, from the wells, and from the twelve layers of the earth "beneath our feet," inviting them to partake of the new rice. Ritual verse suggests that spirits not only dwell within the landscape, but embody it:

> God below us, upon whom the houses are built
> lord upon whom the poles, cut to the correct size, are erected
>
> God who placed himself as the floor of the earth
> lord who is the under layer of it

The land which has been planted, weeded, seeded, and harvested, is the body of the spirits. The gift of abundance is thus returned by the community, through offerings of the firstfruits of cultivation. After the spirits are symbolically served, ritual practitioners are given a real meal consisting of rice of many kinds: red, purple, and highly prized glutinous rice are piled into the practitioners' goblet-shaped plates, in quantities befitting their roles as masters of ceremony.

The community of participating households, the "many people" of one ritual celebration, are then given their share-out of rice. Like the inhalation of a single breath, the produce of single fields, separately cultivated, yet collectively harvested, is pooled in a basket brimming with the rice of many farmers. This first phase of the preharvest ritual is centripetal, forming a nucleus of persons and rice grains on the ritual field and in the ceremonial basket. Then, like breath released, rice yielded up is returned: a gracious movement of dispersal. Rice, symbol and substance of Toraja prosperity, flows outward from a ceremonial center to its original donors, the spirits, its guardians, the ritual practitioners, and its cultivators, the rice farmers.

Before written texts compressed, codified, and preserved information about the techniques of agricultural production, before computer display screens and floppy disks presented a multitude of images and information, the landscape rituals of many preliterate peoples, including the Toraja, played a crucial role in the preservation of environmental information. These ring cycles of the seasons, timed to the sun and keyed to the constellations, encapsulated in dramatic forms, images and information about the environment. Agrarian ceremonies were indispensable for the perpetuation of the environment and the continuity of societies dependent, in large measure, on protein obtained from the wet-rice landscape.

Toraja rice-related rituals frame the structure of the wet-rice landscape by marking and linking crucial nodes in the natural and social environment. They compose the frames of landscape memory and perception, signalling the importance of water sources, instruments of cultivation, components of the irrigation system, and the social collectivities that make cultivation possible. Like the seeds whose cycles they inaugurate, celebrate, and close, these ceremonies convey a surplus of information concerning topography and timing, the instruments and substances of cultivation.

To minaa, "The Wise Ones," and *indo' padang*, the "Guardians of 100,000 Prohibitions," are the bearers of landscape ceremonies. These masters

Harvested *padi* drying in the sun on a lichen-covered boulder, Mount Sesean. Photograph by T. Volkman.

of memory and ceremony held to insure the preservation of the wet-rice landscape by remembering ritual verses and the structure of agrarian ceremonies. They are indeed the Mothers of the Land, engendering through remembering.

Memory and Commemoration

> Customs of the ancestors we perform
> They refuse to be left behind
> Returning to be remembered
>
> —Ritual Song, Mount Sesean

Toraja ceremonies of the landscape do not represent neutral information or environmental "data." Nor are these rituals moving solely in that they are kinetic, occasionally frenetic. Toraja ritual moves men through commemorating (recommitting to common memory) shared images and feeling about the wet-rice landscape, its community of spirits, plants, and persons, as well as irrigation channels and terraces. These cyclical ceremonies revivify Toraja understandings of the moral tissue of interconnections throughout the highlands environment.

Toraja rituals of the wet-rice landscape stir the senses and appeal through many channels: sight, hearing, smell, and a sharply focused sense of ordered beauty. And, through a multiplicity of expressive forms: the spoken arts of oratory, the animate arts of ritual architecture, the silent arts of mime, gesture, and simple pointing, the lively commotion of dogs yapping, smoke rising, and ritual speakers ceaselessly chanting.

If the rising column of smoke from offerings of

aromatic grass is a sign of the directionality of communication between men and the spirits of the land, the movements of Toraja rice and its rituals through the landscape are the tracks of a particle of belief in the cloud chamber of an agrarian landscape.

Toraja society is changing rapidly. Indonesian education and ideology, consumerism, and Western tourism, among other influences, are affecting Toraja conceptions of the role, audience, and efficacy of religious ceremonies and their relationship to agrarian practices. Agrarian ceremonies and the beliefs that inform them will probably not exist two decades from now, at least in the forms we know them. For now, Toraja landscape rituals, and those of numerous other small-scale societies throughout the world, encapsulate and communicate in symbolic form what post-industrial societies have been forced, belatedly, to acknowledge and specify in quantitative form—namely, that what is taken from the environment must be returned. Perhaps this moral, sensuously conceived model of sustaining ecological relationships, of lasting reciprocity between people and land, is the gift of simpler, changing societies to those more powerful, a metaphor and model of fruitful environmental relations. In ritual verse, the Toraja exhort the desired contents of the entire world to flow toward their isolated mountain villages through the golden water-channels of their wet-rice landscape:

We make a water-channel for you to come
We build a stone bridge for you
We make a golden waterworks

The bounty will arrive here
Like the sea encircling the earth
And there will be no brokenness.

—*To Minaa* Lumbaa of Buntu Tagari village

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