CONTINUITY AND CHANGE IN THE PADDY LANDS OF THE KANDY DISTRICT

Almost a century has passed since Ananda Coomaraswamy wrote unequivocally that "Sinhalese society was a community based on rice" (Coomaraswamy 1956: 29). He was not thinking just of the Sinhalese diet, though in his time, as today, the average Sri Lankan consumed over 200 pounds of rice—that is the uncooked weight—annually. He was not thinking just about employment, though he cited the 1901 census finding that farmers constituted 90 percent of the island's labour force. Instead, or in addition, he was thinking of a kind of rice-mindedness that filtered the world through a consciousness of this staple grain. The example he developed most fully was the intricately prescribed use of rice in the *netra mangalya*, or "eye ceremony" marking the fearful completion of temple statues.

Coomaraswamy was neither the first nor the last to observe this centrality of rice in Sinhalese culture. That ever-fertile source, Robert Knox, describes the talismanic ceremony customary before threshing (Knox: 11), and almost 300 years later Edmund Leach would include a photograph of that ritual in *Pul Eliya*, his well-known anthropological study of that village (Leach: 257).

Even Sinhala-deprived visitors can sense this cultural saturation, though we are restricted to a form diluted by translation. I think back to Hugh Nevill's collection of Sinhala nursery rhymes, published in the 1880s. One, positively imbued with the atmosphere of a rice-centred village, reads: "Dew is settling on the moisture of the rice in the field,/ On the roof the straw is nodding, nodding in the wind,/ Bumble bees are taking pollen from the shapely flower,/ Our mother is coming afar, drench, drenching" (Nevill: 71). It would not be long before those same children would be working in the fields, and for the music they would sing there we can turn to H.C.P. Bell, a founder, if not *the* founder, of archaeology in Sri Lanka. He gives us, also from the 1880s, a nine-stanza harvest song that begins like this: "May all the gods permit us to enter the field after worshipping the sun god:/ The gods' consent obtained, O goyi lord, give us sickles./ May the clouds keep us cool, shading the sun's rays,/ And the gods deliver us from all evil, granting peace these pèyas" (Bell: 70).

Bell wrote that the customs connected with paddy "continue to this day—though, be it noted, with marked diminishing force…" (Bell: 44). In a brief paper of 1905, Coomaraswamy too would sound this note of mutability: the customs associated with paddy cultivation, he wrote, were "slowly dying out, and are often neglected or forgotten by the younger generation" (Coomaraswamy 1905: 413). Even Ceylon's congenitally prosaic British administrators sensed the loss. The members of Ceylon's Land Commission of 1927, for example, stipulated that their

goal was "first and foremost the preservation of the peasantry," but they acknowledged that with modernization "the conditions to which the peasant has been accustomed for generations are radically altered often in the space of a few years" (Land Commission (1927): 12).

Still, just as rice survives today as the nation's staple crop despite a flood of imported wheat, so rice-mindedness survives, despite urban or urbanized life. D.M. Jayaratne as minister of agriculture saw to it just a few years ago that a huge simulated *vibissa*—a round rice-storage vessel—was built on the top of Ambuluwagala, a steeply conical hill near Gampola. No matter that the *vibissa* is hardly known among Kandyans, who incline to a cubical barn, or *atuwa.* (An exceptionally fine example stands next to the famous Embekke temple, a few miles from Gampola.) Choosing a *vibissa* for the monument was an accident: the designer, it happens, was on the faculty at Peradeniya University but hailed from the north, where the *vibissa* is common. The point, in any case, was to create a symbol honouring an agrarian society sustained by—resting upon—rice, and this, the hilltop *vibissa* did.

Similarly, it is no surprise that the *Aluth Sehal Mangallaya* or New Rice Festival observed at Anuradhapura's Sri Maha Bodhiya is nationally televised, as well as observed locally at a thousand places. It is more of a surprise, perhaps, that Sri Lanka's rice symposium of 2000—these have been decennial affairs at the Department of Agriculture since 1980—concluded by recognizing that "rice will continue to be the basis of the socio-cultural and socio-economic life of the Sri Lankan nation" (*Rice Congress 2000*: 251). That is a remarkable sentence: I cannot think of any other agriculture department that would place "socio-cultural" ahead of "socio-economic."

So much for the enduring cultural importance of rice in Sri Lanka. I begin with it because I want to suggest by analogy that the same tension between tradition and change exists when we move from "culture" to "agriculture." I want to suggest that both continuity and change are evident today in the island's paddy landscapes. On the one hand they help to preserve—and on the other to eradicate—this iconic crop.

One can see the opposition very clearly in the Kandy District. Take Udunuwara, one of the district's eleven administrative subdivisions but also one of the five historic parts of the Kandyan kingdom. Just west of Peradeniya and south of the Colombo Road as it approaches Kandy, Udunuwara is a heavily eroded and very ancient structural basin, with alternating layers of hard and soft rocks sagging to form what looks a bit like a giant set of nested measuring spoons. The more resistant rocks form concentric ridges encircling the structure, while between the

ridges long and thin valleys—*deniyas*—have formed atop more easily weathered ones. Long before there were kings at Kandy, the Sinhalese observed this striking topographic pattern. I have no proof for this, but they must have done so, I think, because they built that famous triad of temples—Gadaladeniya, Lankatilaka, and Embekke—almost perfectly astride the central axis of the structure. Modern geologists have reciprocated by naming the basin the Gadaladeniya Synform (Kehelpannala).

Let me mention at this point that topographic maps published by the Survey of Sri Lanka show paddy lands in a bright green. Is it another token of rice-mindedness? Certainly no other land use is shown so prominently, though maps in the British period used other bright colors—even a shocking purple—to indicate plantation crops. In the Gadaladeniya Synform, the maps show a set of nested green ovals unlike anything I've ever seen on topographic maps anywhere else in the world.

It is not surprising that rice should fill these valleys, because Udunuwara was long renowned for its proud farmers in their *deniya* paddies. Robert Knox famously observed that the people here and in adjoining Yatinuwara had a saying: "if they want a King, they may take any man of either of these two Counties from the Plow and wash the dirt off him, and he by reason of his quality and descent is fit to be a King" (Knox: 2). That was more than 300 years ago, but during the twentieth century the government of Sri Lanka held annual contests to find a "farmer king," and the winner, it is said, almost habitually came from Udunuwara or its northern neighbour.

That was before the Green Revolution, however: it was from a time when a farmer did well to harvest 1,500 kilograms of paddy from a hectare—about 30 bushels from an acre. A yield like that is almost shameful today, when some Sri Lankan farmers get 5,000 kilograms to the hectare—100 bushels to the acre. (The conversion factor, by the way, is one 46-pound bushel per acre to 51 kilograms per hectare.) They do it with improved seed and with precisely controlled and ample deliveries of water, fertilizer, and pesticide. With water especially, Udunuwara and Yatinuwara cannot compete with the big irrigation projects of the postcolonial era. That is why there are no top-yielders in these famous old neighbourhoods today and why if one want to see farmer kings now one must look elsewhere, say Polonnaruwa or Hambantota.

The farmers of Udunuwara are not merely lagging: they are quitting. One can see it by driving over the district's extraordinarily dense network of minor roads. Most are new, converted from paths in the years since the British left in 1948. Maintenance is so scanted—I speak with archaic politeness—that many of

these minor roads force one to a crawl. Maybe that is good, though, because at a crawl one cannot miss the paddy lands lying idle, covered in grass as though they were old meadows. One cannot miss seeing other paddy lands in more profitable vegetables, even in paddy season. Most shockingly, one cannot help seeing houses built smack in the middle of paddy lands—something unthinkable in the past, when houses were always build on surrounding highlands. The long loops of green are still there on the maps, in other words, but not on the ground. One of the few places where paddy *is* still ubiquitous is the temple-owned land around Lankatilaka, where there is an increasingly dramatic contrast between the temple on its exfoliating summit and the paddy at its base. I am not sure why paddy survives here, but some of the land grows paddy for the temple monks and some is used as temple offerings. At the base of the temple hill, there is even a large rice-storage barn, an *atuwa* very similar to the one at Embekke.

Abandonment is also widespread in the subdivision to the north, Yatinuwara. The long strip of paddy land once central to the village of Siyambalagoda, for example, was, in the spring of 2005, an ignored strip of grass, dotted with occasional houses freshly planted in the old paddy fields. As the Yala season got under way, four cultivators were at work, compared, according to one of the survivors, with 70 a few years ago. Most of the land, he said, belonged to a single owner and had been farmed by *ande* tenants, hereditary sharecroppers. Paddy prices were so low that the tenants had finally up and left. He went on to say that the former tenants' children had no intention of spending their lives farming.

It is the same in Kundasale, the subdivision on the east side of Kandy. This is the Dumbara Synform, which is not as geometrically elegant as the Gadaladeniya, but once again one will find long narrow strips of asswedumized *deniyas*, hundreds of meters long, lying idle. (*Asswedumized* is a term for a future Sri Lankan Hobson-Jobson: referring to land shaped for paddy production, it is an English word used, to my knowledge, nowhere else in the English-speaking world.) Give them a few years, and these carefully shaped lands will not even look like former rice paddies. And truth to tell, that is probably the owners' objective. Legislation for many years has prohibited the conversion of paddy land without government permission, but if an owner can let his land decay sufficiently, he can probably get away with planting a house on it.

Or take a look at Gampola, near that immense hilltop *vibissa*. The Mahaweli runs north here, and there are relatively large tracts of asswedumized land near it. Most of them, however, now grow vegetables, especially manioc and tomatoes. One does not need much or any fertilizer or pesticides for manioc—only the vegetative "sticks" to plant. Production costs are therefore very low, and one

can probably get eight tons of cassava per acre, which can be sold for at least ten cents a kilo. Compared to rice, that is a very good deal.

The deteriorating state of these paddy lands can be discouraging to a visitor, and I can only try to imagine how it makes Sri Lankans feel, at least those old enough to remember dew "settling on the moisture of the rice fields." Still, there are other places in the district where rice retains its historic primacy.

In surveying them, let me begin with the dubious Minipe Project, the district's only major irrigation project. It is far to the east, where the highlands drop precipitously to the coastal plain. The Mahaweli River comes out of the mountain massif and abruptly turns north—a fact noticed many centuries ago by a civilization better described as hydrophyllous than merely hydraulic.

I call Minipe dubious because by the time the British arrived, the ancient diversion weir and irrigation-canal network had nearly been obliterated, thanks it seems to the tender mercies of the Portuguese. Instead of rice, there was wild grass. Then, in 1858, two British surveyors came by. One of them wrote in his diary: "Had a long talk with the people about the repair of the Minipe-Ela between Hin-ganga and this. They say it is altogether beyond their power. We shall see." Almost fifty years later, Charles Erskine wrote in 1903 that the Ganegoda Ratemahatmaya had restored ten miles of the channel but that with his death the works had again been abandoned. Erskine added: "I am certain it would not be an expensive work to restore the channel from the crossing of the Kandy Alutnuwara road, for down to that point it is in fairly good repair, and the land that is now a howling wilderness could be put to better use" (Brohier: 9-14). It took the British another 40 years to actually do the work, and it was a happy Government Agent for the Central Province who wrote in February, 1941, that "it was a goodly sight to see the channel running full" (Dyson). That was the first irrigation season for the regenerated Minipe. By 1953 there were 493 colonists on the land. Most came from local villages and by local standards were given princely land allocations: five acres for paddy and three highland acres for other crops (*Report on the Minipe*: 4; Farmer: 208).

The Minipe Scheme has had its problems. I well recall an Irrigation Department officer fulminating because the Minipe colonists were not content with five acres of paddy and were encroaching upon their own uplands, converting parts of it to paddy production and, in the process, using water intended for downstream cultivators. Still, drive through at least the upper part of the command area today, and if one is in either of the rice seasons—Maha or Yala—one will be afloat in a sea of paddy.

I call Minipe dubious, in short, because it is new. We have to look elsewhere to find places where paddy has been king since Kandy had kings.

One of these areas is surprisingly close to Kandy. It is easy to miss, however, because the roads to it are both unsigned and in pitiful disrepair. This is the valley of the Talatu Oya, just over the hill to the city's south and draining the east side of still higher Hantane, the famous hogbacked peak to the city's southwest.

The lower slopes of the Talatu Oya valley are covered with terraces, sometimes with terrace walls twice the height of the terrace's breadth. The terraces are not as arresting as the still more vertical paddy lands of Bali or of Banaue in northern Luzon, but they are beautiful enough that they could easily lure many of the foreign tourists who come to Kandy and, truth to tell, find it less than beguiling. Inexplicably, the valley has been ignored by the tourism authorities. Perhaps tourists are a curse, yet Sri Lanka welcomes them to its beaches, its wild lands, its tea country, and its archaeological sites. Somehow this valley, like two others I will mention, has been judged unworthy. Perhaps it has been merely overlooked, which is not so different.

One of the two other places is the valley of the Atabage Oya, a Mahaweli right-bank tributary just upstream from Gampola. At the risk of eliciting Robert Knox fatigue, I will mention that Atabage appears on his famous map of Ceylon, presumably because between 1667 and 1670 he lived just a mile to the north, at Legundeniya. His map shows Atabage enclosed by a curious dotted line, which makes no sense on the map and carries no explanation, but if one looks at Atabage from the same northern rim that Knox did one will understand. There is a sea of mountains here and, in their midst, a small basin of comparatively flat land, meticulously terraced. It is been a fertile granary for a long time, judging not only from Knox but from the old Nagasiri Bodhi Viharaya, a temple that the farmers today say their ancestors paid for. A massive *ambalama*, modernized with concrete benches but still with its old stone columns and tile roof, marks the old path to Kandy and continues to be an inviting place to rest.

There are farmers here who grow vegetables, especially in the Maha season so they will have cash for the New Year holidays. At least one of them is serious enough to have his own truck to carry produce to the central distribution centre at Dambulla. His neighbours may not have their own trucks but they load boxes for the small trucks that come by every day. One does not see houses sprouting in the terraces here. One will not see land sitting idle during a crop season. One sees plenty of paddy, growing on terraces that are arrayed like wide temple steps up a gentle slope.

It is the same along the Gurugal Oya, a tributary of the Maha Oya. The headwaters of this valley, south of the Atabage Oya, are in Loolecondera, the famous estate where James Taylor established. This became the oldest tea field in

Sri Lanka. From Taylor's Seat, which is a classically Victorian stone perch for imperial contemplation, one can look far down the Gurugal Oya and just discern the distant paddies. Go down to Deltota, however, and then continue downhill over a wretched road that writhes as though it can't abide a straight line. One then finds oneself in a paddy universe, water trickling from bund to bund as it works its way downhill. Visitors from temperate latitudes will contribute their own cascade of sweat.

There are several villages here: one, Kotagepitiya, has 64 hectares of paddy—154 acres—shared by 188 farmers (Data Book for Village Irrigation: 173). Kotagepitiya is also the start of the Marapola Ela, a 10-mile-long canal built in the late 1940s to irrigate 2,000 acres. Before one jumps to the conclusion that paddy here is a gift of the British, I should say that there is another weir very close by, on another tributary of the Maya Oya called the Mul Oya. The British restored it in 1900 from a much older canal that brought water not only to irrigable lands but to Hanguranketa, which in Knox's time was the residence of the Kandyan king (Arumugam: 216). It is implausible that the Kandyans would build such a canal and not terrace and reclaim the lands around Kotagepitiya, which require much less engineering.

And so, alongside the contrast between continuity and change in paddy culture, we have the same contrast in paddy agriculture: some places where paddy is disappearing and other places where it is grown today as it has been for centuries.

Before I go any further, I should take a quick look at official statistics to see if they confirm my sense of decline, which is based simply on my own observation. The answer, in brief, is that they certainly do: official figures show a steady decline in the paddy area of Kandy District from 22,000 hectares sown in Maha 1979/80 to 19,147 in 1989/90 and 15,800 in 1999/2000; the provisional figure for Maha 2004/05 was 13,192 hectares (Paddy Statistics: 8 and 12). That is not very far short of a 50 percent decline since 1980. Focus on areas close to Kandy, and the drop is even more precipitous: the area sown to Maha paddy in Udunuwara, for example, fell from 3,536 hectares in 1989/90 to 1,569 in 2004/5. The comparable figures for Yatinuwara were from 3,549 to 1,600 and for Kundasale from 1,856 and 1,061 (Herath: personal communication).

It is common knowledge that the driving force behind this decline is paddy's low price, currently about thirteen rupees (or U.S. cents) per kilogram. One can very quickly work the numbers from the farmer's perspective, and I do so here relying on sample surveys from the Department of Agriculture. It calculates that the average yield among the farmers it surveyed in Kandy District for Maha 2003/04 was 60 bushels an acre, or 3,000 kilograms per hectare. At 13 rupees per kilogram,

that makes a gross income of 16,000 rupees, or $160, per acre. If one assumes that the farmer's labour and equipment are worthless, then his expenses were 12,000 rupees and his profit was 4,000 rupees, or $40. If one kindly grants that his labour and equipment are worth the cost of hired labour and equipment—that is about 300 rupees or $3 a day for labour—then his expenses were 23,000 rupees, and his profit was a negative 7,000 rupees per acre. If one allows him to take two crops annually, one can only multiply the pain: his profit was either 8,000 rupees or a negative 14,000 (*Cost of Cultivation*: 42).

Suppose we are semi-tough-minded: we deny that his labour and equipment have any value but we do allow him to take two crops of paddy annually. Then his net income of 8000 rupees will amount to 666 rupees monthly. Suppose he has a family of four, which is about the size of the average district household. His monthly per capita income works out to 166 rupees. And here is the punch line: Sri Lanka's official poverty line for 2004 was 1,526 rupees per person per month (Official Poverty Line: 5).

Let me add a second punch line: my tidy assumptions included allowing the farmer an acre of paddy. That is common, even small, at Minipe, but it is unusually big by district standards. As recently as 1982, the census reported 106,000 agricultural holdings in Kandy District; they covered 162,533 acres. Time passes, however, and land is split among children. The 2002 census found very little change in agricultural acreage, which was down about a thousand acres to 161,478, but it found a huge change in the number of holdings, which had almost doubled, to 193,766 (Data Book on Census: Table 5).

Run the financial numbers with these more realistic assumptions, and one may wonder how people can possibly survive here. There may be many answers to this question, but two stand out.

First is the fact that villagers here have never had a lot of money but have not needed it because they were self-sufficient to the point of growing cotton for their own cloth and using Mee tree oil for lighting. Some things had to be acquired—pottery and iron tools, for example—but they were acquired by barter with a local potter and smith. Even today, though farmers buy cloth and kerosene and when they need money for their children's education, many are able to grow most of their food and to raise the cash they need from the sale of highland crops, especially spices.

The other obvious explanation is that most of these people are no longer primarily farmers. For the district as a whole, only 19 percent of the labour force works primarily in agriculture. Slightly more are in industry, and 60 percent are in service jobs.

Neighbourhoods like Udunuwara, Yatinuwara, and Kundasale, in other words, have become bedroom communities or country suburbs for the city of Kandy. The most obvious visual indicator of this is the flotilla of growling or belching buses that alternately prowl and howl over the district's suffering roads. Almost as visible is the sheer crowding in these places. Udunuwara, Yatinuwara, and Kundasale each have about 100,000 people living on 70 square kilometers, for an average density of over 1,400 people per square kilometer (*Statistical Abstract*: 48). Eyes glaze at such numbers, but the numbers in this case indicate terrific crowding, more than twice the population density of the district as a whole and four times the national average. They give each resident of these neighbourhoods about 700 square meters—a square plot measuring a bit over 25 meters on a side.

The wonder is that people bother growing paddy at all. An acre of tomatoes (the only published figures I have found come from a survey in the nearby Badulla District) can be sold for a profit of $600 or $900, depending on whether or not one allows the farmer to value his labour (*Cost of Cultivation*: 28). Paddy does have the advantage, though, that most farmers here grow it for their own use. Each kilogram they grow, milled to about .7 kilograms of rice, is therefore worth not the 13 rupees they could sell it for but seven-tenths of the 30 rupees they would have to pay for it if they bought their rice in the market—40, if they wanted good rice.

The real temptation, however, is not to plant vegetables or rice but to build on the land. Residential lots set back from the new Peradeniya-Kandy highway are worth $400,000 an acre. Land a few miles south of Peradeniya but along a motorable road is worth more than $80,000 an acre. No wonder that land is sold not by the acre but by the miniscule perch, an elsewhere-forgotten medieval unit of measure, with 160 perches equalling an acre. The $80,000 acre sounds more reasonable when sold for 50,000 rupees or $500 a perch. For that kind of money, though, one can buy Hantanes of rice.

Is the decline of paddy a problem in search of a solution? I am inclined to say with regret that it is not and that instead we are observing an inevitable, ineluctable concomitant of progress. (I use a Latinate diction to soften a brutal fact.)

I am not alone in my romantic regret. Forget those nursery rhymes and the rice straw "nodding, nodding in the wind." Forget the symbolic *vibissa* atop Ambuluwagala. Instead, go to the impassioned legislative debates of 1927, when the government was on the verge of creating its first land commission. One of the main currents in the debate was a deep anger at Crown usurpation of Kandyan land. Here, for example, and speaking on that theme, is a young D.S. Senanayake: "Nothing since the British occupation of Ceylon has done more harm to the island than its land laws" (*Debates*, February 4, 1927: 176). And here, bringing the motion to

create a select committee to investigate the problem, is E.W. Perera: "Settling people on the land is the best investment from the point of view of the social economist, the administrator, and the statesman." Perera then becomes more personal: "We all wish to be on the land… any self-respecting man would go back to the land" (*Debates*, March 3, 1927: 425-6). One can hear in those words an echo of the aphorism Robert Knox quoted long ago, about farmers fit to be kings.

Much of Sri Lanka's subsequent agricultural development can be best understood as a consequence of this agrarian idealism. At the government's insistence, Perera's proposed select committee became a land commission, dominated not by legislators but by government experts. Still, the final report proposed giving small plots of Crown land to peasants: hundreds of villages were "mapped out," in the Commission's phrase, to identify suitable parcels. By the late 1980s, another land commission found that about 900,000 acres had been earmarked for village expansion and that a quarter of all village households were located on these former Crown lands (Land Commission (1987): 133).

In the early 1940s, however, Ceylon was still importing more than half its rice, mostly from Burma and India. The governor of the day, Sir Andrew Caldecott, urged the populace to grow more food. He had precious little choice. "For too long," he wrote, "Lanka has depended for some two thirds of her daily food on imported rice…. The enemy has now robbed us of the main source of supply, and necessity forces us to do what we failed to do at the behest of Prudence. We must now grow what we would eat" (*Handbook*: frontispiece).

Had the British remained in control of Ceylon for the next 50 years, they might have followed through on this goal of self-sufficiency. One thing is absolutely clear, however: the independent government of Ceylon not only followed through on it but was so successful that the island is now approximately self-sufficient, even though rice is so cheap on the international market that Sri Lanka's rice producers find no prosperity in plenty.

I suggest that this drive to self-sufficiency, most commonly associated with the great Dry Zone colonization programs begun shortly after independence, had, at its root, the same agrarian idealism that motivated Perera when he said that "any self-respecting man would go back to the land." It is not as though he was alone, after all. Recall that famous pamphlet of 1933, "The Spinning Wheel and the Paddy Field," in which a very young S.W.R.D. Bandaranaike applauds Gandhian homespun—is pictured apparently dressed in it—as he contentedly spins his *charka* and urges self-sufficiency in rice (Bandaranaike).

Can it be mere coincidence that the Paddy Lands Act of 1953 was that year's first law? It gave administrators the power to seize idle paddy land, assign it

to cultivators, and pay the owners its rental value, minus a penalty of 500 rupees. As reconfigured in the Agrarian Services Act of 1979, the government could assess a penalty of 5,000 rupees, or a month's imprisonment, against any paddy-land owner who, without permission, used paddy land for any purpose other than the cultivation of paddy or of other crops between paddy seasons. As reconfigured once again in the Agrarian Development Act of 2000, landowners who do not cultivate paddy on lands that are best suited to paddy are subject to fines of 100,000 rupees or imprisonment of up to six months.

Now perhaps it is clear why I denied that paddy-land conversion was a problem in search of a solution. A problem it is: the whole trajectory of Sri Lanka's agrarian policy through the 20th century confirms it. But it is not a problem in need of a solution, because the country has had, in various forms for the last fifty years, perfectly good solutions on the books. Cultural values, in this sense, are no match for economic facts. Neither are the best of laws, at least in a society where laws enforcement is highly elastic.

We are dealing with a problem past solution, I think. Farmers may get the required legal permission to convert their paddy land to other uses; if not, they convert the land anyway. That is the judgment of K.M.A. Kendaragama and T.M.J. Bandara of the Natural Resources Management Centre in the Department of Agriculture. They are thinking of Colombo, Gampaha, Kurunegala, and Kandy districts when they write: "due to illegal land filling, the extent that is being filled annually far exceeds the extent for which permission has been granted" (Kendaragama: 75). In a particularly extreme case, they surveyed the Biyagama subdivision of Gampaha District, on metropolitan Colombo's northeast fringe, and found that of its 1,250 asswedumized hectares, 55 were growing paddy (Kendaragama: 76). Nobody is going to put that horse back in the barn.

In the valleys of the Talatu Oya, Atabage Oya, and Gurugal Oya, on the other hand, there is a problem very much in need of a solution. The problem is not retaining paddy: so far as I can tell, there is no prospect of these lands passing out of agricultural use. The problem, instead, is how to raise incomes in households with very little money. What shall these people do, other than head to Katunayake in hopes of trying their luck as menials in the Gulf?

Sri Lanka was a pioneer in one solution: bringing clothing factories—cut-and-sew shops—to remote villages. It is an astonishing thing to drive through Kandy District and come upon such a factory in the field. (Think of the drive up, up, up as you head east from Kandy; at the summit, just before one drops down to Minipe country, one passes Smart Shirts, surrounded by crags and forest.) The manager of one of these plants says it is a good location, better than Colombo,

where labour is hard to find. There are plenty of nearby young women, he says, and they are willing to work for 200 rupees a day for several years, before quitting to get married and have a family. More women are waiting, and they learn quickly, with outstanding eye-hand coordination—not to mention small hands. The cost of trucking the shipping containers from and to Colombo is insignificant; the real challenge now, with the expiration of the multi-fibre quota system, is to compete successfully with countries that do not have to import the cloth they cut.

From the point of view of village income, this solution is a good one, but from the viewpoint of paddy preservation, it is probably neutral. In and of itself, it does nothing to protect the landscape.

Tourism development is another alternative, although again I hesitate. One problem is that villagers may decide that jobs in tourism are more to their liking than bending all day to transplant or harvest paddy. If that happens, the *raison d'etre* of the site is threatened. (Just such a thing has happened in the far north of Pakistan, where I' have seen almost deserted villages along the same Karakoram Highway that brings in the tourists.) Another difficulty is that residents may feel they are on display in a human zoo. Still another problem is that the bulk of tourism income will not go to local residents. In this connection, I think of Galle, where the recent takeover of the New Oriental Hotel by Aman Resorts has sparked a boom in residential properties within the fort. It is chiefly foreigners who buy these properties, however. Elaborately renovated, the homes are to be rented to foreign tourists as vacation villas. It certainly makes for a handsomely restored streetscape, but it does little for local residents, the most fortunate of whom sell their houses for a windfall profit, then move outside the old city.

A shift to vegetables is always a possibility, though one at odds with paddy preservation. It has happened already at Atabage, but is likely to happen slowly elsewhere, because marketing chains have to be established, and to be efficient in relatively remote locations the chains require production on a considerable scale.

It is possible that these places could market paddy at fair-trade prices overseas. It has happened elsewhere with bananas and coffee, and it is happening with rice in Thailand. Still, these remote producers would have difficulty competing even in the fair-trade world with more productive rice-growing areas, including parts of Sri Lanka.

Which brings me at last to the idea I like best: heritage-rice production.

Now let me interject that in the European Union the only cheese that can be sold as Parmesan comes from Parmigiano-Reggiano. Similar restrictions protect Roquefort and Asiago, as well as Kalamata olives, Orkney beef, and of course French wines, which are protected by a Byzantine system first imposed in 1935.

These systems are not perfect—the one for French wines is so complicated that many frustrated shoppers give up and buy a nice bottle from Australia or South Africa—but the principle behind them is clear: the traditional producers of these items believe that they can make a reasonable living even if they must compete with much larger, more efficient producers. To make that living, however, they must not only have a distinctive product of high quality but must be protected against competitors claiming to sell the same thing.

The system works well enough that the European Union has asked the World Trade Organization to make these labels internationally binding. American producers of so-called Feta will protest at having to re-label their product generically as Mediterranean White Cheese, and such objections may impede the imposition of the system, but there are other American producers who could benefit from it. Regardless of how this story plays out, there is a message here for Sri Lanka's paddy farmers: if one produces a distinctive rice, build name recognition for it, and develop an efficient delivery system, one can get a premium price.

Let us begin by looking at rice varieties. Less than a century ago, Ceylon's farmers grew between three and four hundred of them. The most important was Ma-vi, actually a cluster of "great rice" varieties. Most were tall, grew for six months or more, were unresponsive to synthetic fertilizer, sensitive to rice blast, and by today's standards low-yielding (Rajapakse: 1). That at least is the judgment of modern rice breeders.

This picture began to change during the First World War. The colonial government was pressed for food and created a Food Production Committee. The local journal, *Tropical Agriculturalist*, carried a headline in September, 1919, that almost barked at its readers: "Transplant Your Paddy." Not content with hectoring, the journal went on to insist that the savings in seed would pay for the cost of transplanting. The farmers would get a bigger crop, too, as much as twice what they were used to.

This blunt rhetoric was wasted on all but the few farmers who could read English. Perhaps it is as well, because after the war the government itself became more cautious about transplanting, especially for short-season varieties. By 1920, however, an economic botanist had been hired. He was Frederick Summers, a Cambridge graduate, and he was set to work improving Ceylon's rices.

Looking back from this side of the Green Revolution, it is startling to read his prescription: "for some years to come, the problem of increasing the yield of paddy in Ceylon is one of straight selection of the native varieties coupled with a study of the most improved methods of cultivation" (Summers: 174). What he says here, in short, is that he is not going to breed anything. Instead, Summers collected

samples of the most popular varieties in each district. He found that there was much duplication and that many so-called varieties were combinations of varieties. He set out to create pure lines by separately planting the grains from single ears. Hundreds of these plantings were made at stations at Anuradhapura and Peradeniya. Many were later multiplied and released for public use. By the 1940s the most popular rice on the island was a pure line called Vellai-Illankalayan.

Rice-breeders today deem these pure lines a failure, mostly because most did not respond to synthetic fertilizer. It was not an issue until that fertilizer became available after World War Two, when farmers shifted to one pure line that did respond. It was called Murungakayan 302, but its day was brief: in 1959, L.H. Fernando announced at a meeting of the International Rice Commission at Peradeniya the development of "the hybrid selection H-4, derived from a cross between Murungakayan 302 and Mas," a high-yielding Indonesian rice (Fernando: 2). Rices were, at last, being bred for increased yield.

If popularity is the measure, H-4 was a huge success: by the late 1960s, it accounted for more than half of the island's crop. The accompanying trend to monoculture, already evident with the more popular pure lines, was considered a good thing. Fernando in 1959, for example, defined a traditional variety as the rice unaided nature could support at a certain season and place. With fertilizer, he continued, farmers could compensate for the idiosyncrasies of their land and all plant the few most responsive, highest yielding varieties.

That is exactly what happened. As recently as 1956, when Sri Lanka was still in the era of pure lines, the Department of Census and Statistics reported that among the varieties planted in Udunuwara for the Maha season were Hartial, Ratawi, and Murungawi; for Yala, they included Kaluheenati and Suduheenati. Over in Atabage, among the varieties planted were Podiwi in Maha and Pachchaiperumal in Yala (*Report on Paddy Statistics*: 29-30).

It is easy to find older villagers who remember these varieties. Some, one learns, were high in protein; others were high in carbohydrate; some were fragrant. Some were good for lactating mothers, others for labourers in need of energy, still others for priests who could not eat after noon and needed a lot of protein. The villagers may be right or wrong in their recollections, but one thing is certain: one will not find any of these varieties growing in Kandy District today, at least nowhere that the government's assiduous enumerators can find it.

Neither, for that matter, will you find H-4. This once-mighty variety has shrunk to less than half of one percent of the national crop. Breeders now dismiss it as an Old Improved Cultivar. Farmers are instead planting New Improved Cultivars developed at the Rice Research and Development Institute at Bathalagoda, near

Kurunegala. Four of that station's releases—Bg 352, Bg 300, Bg 358, and Bg 94-1—accounted in 2004 for nearly 60 percent of the island's rice (Rajapakse: unpaginated supplement). Many have little flavour, but some do. Bg 360, for example, is an improved Sudurusamba and is grown on 12,000 hectares; it has driven the traditional Sudurusamba down to 53 hectares. Niche markets exist for a few other traditional varieties: Dahanala and Rattaheenati, for example, are considered therapeutic for diabetics.

Where did the other Old Improved Cultivars and the still older pure lines go? The answer is: to the Plant Genetic Resources Centre at Gannoruwa, near Peradeniya. The gene bank there in 2004 reported having 3929 varieties of rice and its relatives (Department of Agriculture: 141).

Twenty years ago, it would have been difficult, if not impossible, to argue persuasively that reverting to these varieties was a way to increase household income in Sri Lanka's remote valleys. But, then, 20 years ago one could not have found shops in the United States stocking a hundred kinds of cheese. One could not have found bakeries with a dozen and more kinds of bread. One could not have found grocers with twenty kinds of coffee. The American market, like markets in all the world's wealthy countries, has changed because people in these places have the money to explore what the world has to offer. They also have their own version of agrarian idealism, not to mention a deep skepticism about the quality of mass-produced food.

Perhaps the first of many problems in developing an international market for Sri Lanka's traditional rices is to make an initial determination of which ones to grow. Hartial would be an obvious candidate for the Kandy District, because it was historically the variety most closely associated with Kandy. When Summers collected the most popular varieties back in 1920, in other words, Heenati was submitted by five districts but Hartial only by Kandy (Summers: 171-172).

The second problem is that for every thousand Americans who know where Parma Ham comes one, not one can name a traditional Kandyan rice. So an educational effort is required, which means not only publicity but a very sophisticated website, not only rich in content about the character of the rice and the village it is coming from but also managed by someone who understands the ever-changing vagaries of search-engine optimization. (No good having the world's best website if Google does not display it.)

Then there are logistics. Twenty years ago, there was no way a consumer in Spokane or Singapore or Southampton could order two kilograms of Hartial from Talatu Oya, Atabage, or Gurugal Oya. Now, however, DHL has a Kandy office. It is still not economically feasible to ship a two-kilogram package of rice to the

United States: the freight bill would come to about $80. If one groups shipments into 20 kilogram lots, however, one can bring the price down to $30. That may still sound extravagant, but there are plenty of consumers in Colorado willing to pay that much in shipping for a small box of New York bagels or California organic vegetables. Call them crazy, but if one persuades them that a traditional rice variety from Sri Lanka is not only good but is doing a social good, price is not a problem.

Finally, and most critically, one has to get the whole thing going, which means that one have to promise farmers a premium price—say three times the value of the rice they are presently growing. That is a completely arbitrary number, and the real one will depend largely on the yield of the heritage rice. With transplanting and plenty of organic fertilizer, however, that yield may be surprisingly high. How high? Back in 1920, the Kandy Food Production Committee had a rice-growing contest, and the winner grew 86 bushels of Hartial on a single acre that he mulched with an inch of green leaves before ploughing a second and third time. Of 45 contestants, six had yields exceeding 60 bushels per acre, or 3,000 kilograms a hectare (Molegode: 325). That figure, recall, is the average yield in the district today, and it tends to deflate the conventional wisdom that the old varieties were inherently miserly.

Parenthetically, one might ask what happened to these star performers. Why is it that their neighbours did not take up more intensive cultivation? The answer goes back to the stubborn refusal of the Kandyans—all colonial subjects, really—to do the bidding of their colonial masters, even if the masters are urging something good for everyone. We know this from the official diary of William Kindersley, who was Government Agent for the Central Province in 1920. His entry for August 30 states that he went to a village near Matale "and distributed prizes for improved paddy growing to various persons. Most of the prize winners were headmen, as was almost inevitable, as the Ratamahatmaya found it easier to put pressure on them than on ordinary cultivators" (Kindersley).

Regardless of yield, farmers in a heritage-rice project will naturally be fearful, so it might be a good idea, up front, to give them a year's supply of paddy for their own domestic use. That way, if the crop fails or the project collapses, they still eat.

No doubt I have overlooked many other snags. One is that it will probably be impossible for one farmer or two or three in a village to sign up for this program: instead, all the farmers under a ditch will probably have to do so together. That way, they can coordinate their agricultural calendars, partly to share the tasks of planting and harvesting but also to irrigate when needed.

Getting a group to buy into this will be tough.

Another wrinkle is that disagreements will eventually arise over the apportioning of project revenues, particularly for the middlemen whose feet are not in the mud.

Such a scheme is not as far removed from reality as one might think. There is an NGO at Tholangamuwa, in Kegalle District, called the Human Development Foundation, and it has sponsored the work of a National Federation for the Conservation of Traditional Seeds and Agri-Resources. The federation in 1998 conducted a survey of farmers still growing traditional varieties, and it then contracted with 200 farmers to grow some of them, particularly highly aromatic rices and red rices with medicinal value. By 2004, the Foundation had expanded to 3,500 participating farmers in most of the island's districts. Many were getting 60 bushels an acre without any artificial fertilizer. Much of their production was for their own use, but some was sold to markets in Colombo for a hundred rupees a kilogram. The Foundation was meanwhile seeking an international certificate of organic production and had already begun developing a plan to sell to Germany and Singapore.

I do not know how successful this program will be, but I would say it is on the right track. I recall Emerson Tennant, whose name appears in writings about Sri Lanka almost as often as Robert Knox's. Tennant wrote in the 1850s that "the fields in which rice is grown in these mountains form one of the most picturesque and beautiful objects in the country of the Kandyans" (Tennant: I, 26). It is still true, and programmes like this can help keep it true while giving the farmers more money. I recall the much less known or quoted Christopher Drieberg, who was once Ceylon's Superintendent of School Gardens and who wrote about 1906 of the Ceylon farmer that "his skill in terrace cultivation, seen in the Kandyan districts, and his ingenuity in well-irrigation, as shown in the north of the island, are, considering his opportunities and resources, nothing short of marvellous" (Drieberg: 356). True again. Finally, I think once again of Ananda Coomaraswamy, who wrote that "if… too long neglected, they will be sought in vain when interest in such matters is at last developed, as is bound to happen sooner or later" (Coomaraswamy 1905: 428). Coomaraswamy was thinking of the cultural side of paddy, but his words apply equally to the agricultural. Considering the fate of these landscapes and the people who have made them and depend on them, I am inclined to paraphrase Winston Churchill speaking of democracy: heritage-paddy production is the worst of all the choices, except for all the others.

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