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***Campe*sinos and the Hidden History of Biodiversity**

The Food and Agriculture Organization (FAO) of the United Nations has declared 2014 the Year of the Family Farm in recognition of “the important contribution that family farming and smallholder farming can play in providing food security and eradicating poverty . . .” (United Nations). The FAO’s largely symbolic gesture resulted in part from political pressure applied by La Via Campesina, a transnational network that promotes small-scale agriculture. In an era of economic globalization, small farms have emerged as potent symbols of social justice and environmental sustainability. But, the contemporary importance of *campesinos*, or small-scale cultivators, in Latin America is not only symbolic. In Brazil, small farms produced nearly half of the country’s maize, 70 percent of its beans, and nearly 90 percent of its yucca in 2006. In Mexico, more than two million *campesinos* cultivate maize. Moreover, field research consistently demonstrates that small-scale farms are more biologically diverse than large-scale monocultures.

Unfortunately, historians of Latin America and the Caribbean have paid little attention to small-scale agriculture and its contribution to the region’s agrodiversity. By placing *campesinos* at the center of Latin America and the Caribbean’s rural environmental history I intend to examine the hidden history of agrodiversity—both the varietal suite of crops (“planned diversity”) and the uncultivated flora and fauna that reside on or near farmlands (“associated diversity”). In order to do so, I have to bear in mind the legacies of the pre-colonial and colonial eras. Many crops cultivated by modern *campesinos* originated in the Americas. This means that there are centers of domestication, mostly in tropical locations, where one finds local “landraces” (open-pollinated varieties) of crops including maize, beans, squashes, potatoes, tomatoes, peppers, quinoa, manioc, peanuts, and sweet potatoes. In addition, colonizers from Iberia and slaves from Africa introduced many other crop plants including bananas, barley, beets, carrots, coffee, grapes, oil palm, rice, sugar, and wheat. During the colonial era, food became a marker of social identity; colonial elites often disparaged native crops such as maize, chocolate, and peanuts as *comida de indios* (Indian food), even as daily conditions compelled them to partake of native foods. An additional legacy was the demographic collapse of indigenous populations due to colonizers’ violence and the unintentional introduction of pathogens and parasites in the sixteenth and seventeenth centuries. Among other things, the massive population decline

affected nineteenth-century agriculture by creating conditions of land abundance (with land often covered in secondary forests) and labor scarcity.

Here I provide brief examples of three crops of global importance: maize, potatoes, and coffee. The first two crops have been central to foodways in Latin America for millennia; coffee, introduced to the Americas during the colonial era, became the region's most lucrative agro-export in the nineteenth and twentieth centuries. Small-scale cultivators have been central to the production of all three.

Researchers have recorded more than 50 distinct open-pollinated landraces of maize in Mexico, the modern-day territory of which includes centers of early maize domestication and where the botanically related teosinte plant can still be found. Landraces constitute approximately 80 percent of Mexico's total maize crop, 75 percent of which is cultivated by campesinos working rain-fed soils. How have these varieties persisted through the numerous political, social, and green revolutions described in this issue by Boyer and Cariño? Part of the answer lies in nineteenth-century agrarian structures. Economic historians have demonstrated that *haciendas* in postcolonial Central Mexico generally could not compete with campesino maize production on *temporal* (non-irrigated) soils. However, by the late nineteenth century, the combination of rising grain prices and surplus labor enabled estate owners to expand onto temporal lands through the use of sharecroppers, who mobilized the labor of family members to assist with maize cultivation. Moreover, in many rural areas the number of *ranchos* (relatively prosperous family farms) actually rose in the years prior to the revolution. In all likelihood, this multitude of small-scale cultivators, growing maize under variable environmental conditions, augmented agrodiversity. On the other hand, some sharecropping contracts dictated that the haciendas would supply seed, suggesting a centralization of decision-making that may have occasioned a decline in varietal diversity.

The Mexican Revolution (1910–1920), driven in part by campesinos seeking guarantees to land, water, and forest resources, culminated with the formation of a powerful, central state committed both to economic nationalism and ensuring the preservation of rural livelihoods. The revolutionary state implemented land reform, expanded rural education, promoted agricultural cooperatives, and introduced new technologies in the form of fertilizers and hybrid seeds. Between 1940 and 1980, maize harvests increased six-fold due largely to expanded acreage and fertilizers; however, hybrid seeds associated

with the so-called Green Revolution did not have a major impact outside of the states of Sinaloa and Sonora where large-scale, irrigated maize farming developed. In the rain-fed, mountainous regions of the states of Jalisco, Oaxaca, and Chiapas, campesinos continued to cultivate open-pollinated varieties. Foodways appear to have played an important role in the persistence of landraces. For example, Oaxacan cuisine often calls for specific varieties of corn. More generally, although Mexico began to import yellow corn from the United States in the 1970s, campesinos continued to supply white corn varieties preferred for tortilla-making (Fernández et al. 2012).



Figure 1:
Farmer in
Guatemala.
Source: Kim
Milward-Oliver
via flickr

In the central Andes, millions of campesinos cultivate a remarkable variety of crops including thousands of varieties of potatoes, maize, and tubers (e.g., ulluco, mashua, and oca) rarely consumed outside of the Andes, in addition to quinoa, a pseudo-grain that has recently become part of a transnational culinary chic. According to geographer Karl Zimmerer (1996), who carried out fieldwork in Paucartambo, a Quechua-speaking region in Peru, the post-independence period (1826–1880) did not bring any dramatic changes in the crops cultivated by the region’s campesinos. However, government, business, and campesino initiatives brought about significant shifts during the twentieth century. The

construction of transportation infrastructure (highways and railroads) helped to revive commercial agriculture during the first half of the twentieth century. Hacienda owners, like their counterparts in pre-revolutionary Mexico, planted their best lands directly and granted campesinos use rights to marginal lands in return for their labor.

Cultivators began to devote more land to a single, high-yielding landrace potato (*qompis*) that became an important commodity in regional markets. In addition, barley cultivation prospered following the establishment of a beer brewery that paid high prices for a particular kind of malting barley. The expansion of *qompis* potatoes and barley led to a curtailment of quinoa planting in the 1950s. Around the same time, hacienda workers cut back on their cultivation of an early potato, known locally as *chawcha*, on account of conflicting labor demands and limited irrigation water being increasingly dedicated to fields planted with the *qompis* variety. In light of the regional domination of commercially oriented haciendas, campesinos' subsistence fields became key places of crop diversity. Drawing on a Quechua notion of a fit livelihood (*kawsay*), Paucartambo campesinos maintained foodways based on landraces even as they incorporated commercial crops like barley into their fields.

Major changes took place in highland Peru in the late twentieth century. The military government led by General Juan Velasco (1969–1975) responded to peasant unrest during the 1960s by instituting a land reform that did away with haciendas and servile labor relations. The Velasco government also promoted industrialization and urbanization via policies that lowered the prices of staple foods like wheat and potatoes. Many of Paucartambo's campesinos participated in new commercial networks, but some found it difficult to maintain both commercial crops and diverse subsistence plots. By 1990, more than one-third of the region's small-scale farmers had ceased to cultivate landraces of "floury" potatoes. This shift did not necessarily signify a loss of Andean cultural identity; to the contrary, prosperous family farmers acquired local prestige by cultivating and cooking meals based on crops like floury potatoes, quinoa, and maize-based chicha beer.

The evidence from Mexico and highland Peru indicates that significant genetic erosion occurred during the past century, but that it did not result from direct substitutions of landraces for "Green Revolution" hybrids, nor did large-scale monocultures literally push out campesinos. Instead, government policies intended to provide low-cost food for urban-industrial workers, in conjunction with rural out-migration and campesino

participation in regional commercial networks, created pressures on labor time and natural resources that reduced the variety of crops cultivated.

In contrast to maize and potatoes, coffee in Latin America and the Caribbean is strongly associated with liberal modernity. Coffee exports helped to finance expanding states in Brazil, Colombia, and Central America. In some places, including the Paraíba valley of Brazil, nineteenth-century coffee planters relied on slave labor and the short-term fertility of forest soils to establish large farms. When coffee production shifted to São Paulo, large estates (in excess of 100,000 coffee plants) persisted, aided by the paulista government that subsidized contract labor in the form of immigrant families. But, in Colombia and Costa Rica, small farms (less than 20,000 plants) accounted for more than 60 percent of all coffee plants in those two nations during the 1930s. The coffee trade therefore gave rise both to large estates and prosperous campesino families who depended upon (and struggled against) the capital, technology, and markets largely controlled by merchants and processors.

At least two relationships, one ecological and the other social, have functioned to foster biological diversity on Latin American coffee farms over the past century. Firstly, coffee is a perennial, woody plant; its botanical cousins in Africa are found in shaded, forest understories. Historically, small-scale coffee farmers have incorporated various kinds of shade plants (including bananas, plantains, and various tree species) into their fields in order to produce export coffee. Secondly, the people (and animals!) who tended to coffee plants also needed to eat. In Colombia, for example, a “coffee” farm often included sugar cane, plantains, manioc, maize, and animal fodder. Contemporary field research indicates that in El Salvador and Nicaragua, small-scale coffee farms collectively contain more than one hundred species of trees and medicinal plants, in addition to several varieties of maize and beans. This planned diversity creates habitats for associated diversity—coffee “forests” provide homes to birds, insects, mammals, and orchids (Méndez et al. 2010). Historians have paid little attention to the meanings of this associated diversity, but it calls into question the assumption that export-oriented crops are antithetical to biological diversity.

Environmental historians of Latin America and the Caribbean have stressed the destructive aspects of export-oriented monocultures. This undeniably important dimension of the region’s rural history does little to explain the persistence of either campesinos or

agrodiversity. Local landraces of maize and potatoes have endured in spite of an unprecedented demographic collapse, centuries of oppressive colonial rule, the rise of export agribusinesses, a rural-to-urban exodus, and the introduction of hybrid seeds. Moreover, coffee systems—overwhelmingly oriented for export—have included both large-scale monocultures and small-scale polycultures. This preliminary analysis suggests that strategies for self-provisioning or subsistence may be crucial for explaining changes in agrodiversity across time and space. Even in regions where agroexports have dominated national economies, scholars need to pay close attention to foodways.

Of course, the history of agrodiversity in Latin America and the Caribbean is not only a tale of persistence. Environmental historians also need to account for the erosion of diversity, particularly over the past fifty years, when a number of forces compelled campesinos to reduce crop plant diversity or even abandon agriculture altogether. The loss of agrodiversity is clearly linked to the history of campesino articulation within both markets and nation-states, but the precise nature and functioning of these linkages remain to be spelled out before the hidden history of Latin America and the Caribbean's agrodiversity can be more fully revealed.

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