

Steps to Sustainability: Collapse of Rome

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By Richard W. Franke

This is the latest installment in our Signs of Sustainability series, organized by Sustainable Tompkins. Visit them online at www.sustainabletompkins.org.

On Sept. 4, in the Christian calendar year A.D. 476, the Roman Empire collapsed when a Germanic soldier named Odoacer deposed the last emperor, Romulus Augustulus. Following this event, Europe fell into 1,300 years of food shortages, trade breakdown, epidemics, invasions and general public insecurity.

The collapse of one of the two or three largest empires in history has fascinated scholars and pundits for hundreds of years. Theories about the collapse of Rome abound. Was it moral degeneration, overextended supply lines, lead poisoning, malaria, peasant revolts or Germanic tribes? Does the fall of Rome teach us anything about sustainability?

The collapse in A.D. 476 was not exactly that of the Roman Empire: it was the collapse of the western Roman Empire—with its capital in Rome. Often forgotten is that the eastern half of the classical Roman Empire, with its capital in Byzantium (now Istanbul), contin-

ued as a centralized state for another 1,000 years.

Recent research suggests that Rome collapsed in part because of the introduction of unsustainable food policies in key parts of the empire. The Roman conquest of Gaul (France plus some other territories) in the first century B.C. added thousands of square miles and enormous agricultural resources to the empire.

At first, the benefits of domination far outweighed the costs of the conquest. The Roman conquest coincided with the Roman Warm Period. Warmer than average temperatures in northwest Europe during this time tempted the Mediterranean-based conquerors to introduce southern European cash crops into regions that had previously been too cold. Varied, local crops that had been adapted to the weather patterns of the region were replaced.

Cash crops were immediately of high value, and local intercropping was abolished in many areas. Then, around A.D. 300, the warm period ended. The cash crops—and the local economy—crashed. What had been a boon to the treasury turned into high-cost military campaigns to control the heavily taxed farmers

in Gaul. What little surplus there was went to pay the salaries of the soldiers.

The army could not fully contain the situation, however, and large chunks of the western empire in and around Gaul broke off for much of the late third century and again in the fourth century.

In this brief historical vignette we may see the workings of something in ecology known as Liebig's Law, or Law of the Minimum. We know it today as the "Achilles' heel." According to this law, any system at any time has at least one factor that limits its expansion or survival. Systems can have changing limiting factors, and they can also have more than one such factor. Limiting factors can be outside influences (often called drivers or forcings), or they can be internal to the structure of the system.

According to this view, for the Roman Empire, a key limiting factor was the need to fill the central treasury with funds to pay the

troops. This structural feature of the empire interacted with an outside driver: the weather. The decision to conquer Gaul, and then to bet on the continuation of Mediterranean weather where it had not typically occurred, increased the system's vulnerability to disturbance.

The empire depended on the remittances from conquered areas. Big conquests meant big remittances. Cash crops meant bigger remittances. Inequality between the Roman central state and its conquered people made the system continuously vulnerable to uprisings. The changing weather was a trigger. In a way, the Roman Empire collapsed because, well, it was an empire.

This is the latest in a series of articles on the history of sustainability. Richard W. Franke is professor emeritus of anthropology at Montclair State University, a resident of Ecovillage at Ithaca and a board member of Sustainable Tompkins.

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