

Defining success well acted as a crucial component of Molly's experience with the tomato farmers in Mali. Although she had been assigned a task simply to create more tomatoes may have been accomplished, but was this truly success? She evaluated the stocks and flows of tomato growth and consumption in the region, but only regarding how many tomatoes are needed, not regarding the logistics of how the tomato stock flows from its site of production to a state which is usable by humans. Although it seems apparent that successful tomato production should be analogous with successful nutrient provision to the Mali population, it is not.

What was needed was better, more accurate accounting by the government institution to define exactly what success should mean. I started to wonder, who carries the burden of defining success using the nuances of the field? Is the government institution responsible for finding enough experts to understand the system and specifically express its boundaries, flows, and time delays? Or does the burden fall on scientists like Molly to ensure they have explored all options and paths the systems could take given a planned intervention? In this case, the task of accounting was never strictly assigned so neither party made an effort to make sure it was thoroughly accomplished.

When Molly imagined the system, she treated the logistics regarding the transfer of grown tomatoes to the hungry Mali population as an externality, assuming that this was not an element which would become part of her problem domain. Since tomatoes are a measurable good being transferred from farmers to families, they act as a stock in the system. She had already established, through systems thinking, that the flow of tomatoes included a path from farm to consumers. By nature of systems thinking, it should be assumed that if a transfer of stock is included in the system, the entire process of the flow of this stock should be qualitatively considered. However, Molly struggled to fully evaluate the the logistics of this flow. Additionally, Molly could have regarded the tomato industry in Mali was regarded as a two-stock system in which tomatoes are traded for money. Since she was given the information that the citizens of Mali wanted tomatoes, economic demand for tomatoes was implied to be present. Theoretically, this should have supported a functional flow of money from consumers to farmers and of tomatoes from farmers to consumers. Actually this would be assuming that consumers had access to funds in order to buy tomatoes. I wonder if level of economic wealth in the population compared to the planned tomato harvest was considered? If people had ample funds, this could trigger a positive feedback loop; as tomatoes became available after the disease cure, people would buy lots of tomatoes and still have money to demand more, so farmers would continue to produce tomatoes at higher rates as long as the consumer base is still willing (wants tomatoes) and able (can afford tomatoes) to purchase them. I also wonder, if economic ability was considered, was the cost of the metal and the labor to can the tomatoes considered? As an IT employee of a canning company, I was amazed to find out that the price of a canned food item goes into the canning process more than the value of the actual food.

One of the most crucial elements of this system that was treated as an externality of this system model was time. A chronological requirement should have been assumed: first the can plant to distribute the flow of tomato stock should be secured, then finished tomatoes can be sent

to be canned and distributed. However, the hungry population acted as a time-sensitive element so it would not cause maximum success to halt tomato production until the completion of an operational plant. I wonder if an early deadline was included in the definition of success? If it was, the system intervention would have to estimate the time taken to make the can plant operational and adjust the tomato growth by that much. A threshold in time exists such that if the tomatoes are ready and expired before the plant is ready, no tomatoes can be delivered, resulting in failure in the retrospective definition.