Revisiting the adequacy of the economic policy narrative underpinning the Green Revolution

September 14 2022

According to a recent analysis, the Green Revolution narrative was based on a misinterpretation of a case study in Guatemala. Credit: Alliance of Bioversity and CIAT / Manon Koningstein

One of the founding narratives of the Green Revolution (a push towards technology-driven modernization of agriculture starting over 50 years ago) has been found to be false, according to a recent analysis by a

researcher at the Alliance of Bioversity International and CIAT.

The Green Revolution is often credited with tripling production of staple crops while using only 30% more cultivated land in the latter half of the 20th century, largely through the use of technology like breeding higher yielding plant varieties and the application of pesticides and fertilizers.

Policy thinkers paved the way for the Green Revolution and as part of his 1964 book, Transforming Traditional Agriculture, Nobel Prize-winning economist Ted Schultz told the story of Maya Kaqchikel farmers growing onions and other crops in the delta of a small river and the surrounding hills in Panajachel, Guatemala. He used this tale of a technologically-stagnant rural village fully embedded in a market economy to support his global vision of technology-centered agricultural development. For Schultz, this village was a well-documented example of a much wider trend in global agriculture.

This story, Jacob van Etten, Principal Scientist and Director of the Digital Inclusion research program at the Alliance of Bioversity International and CIAT, said, became the narrative basis of the Green Revolution, along with the population growth and food security aspects from Norman Borlaug, who also helped to develop the dwarf strain of wheat that dramatically increased crop yields.

Van Etten said that by revisiting the history and context of the 1930s, it became clear that Schultz had "got the story wrong" and that new narratives about the Green Revolution should reserve a much more important place for institutional change in agricultural development.

In his paper, Revisiting the adequacy of the economic policy narrative underpinning the Green Revolution, published in the journal *Agriculture and Human Values*, van Etten showed that Schultz deliberately tried to hide that the village's Mayan farmers were not challenged in

technological terms and were able to reach relatively high economic returns.

"I hadn't expected this… What I thought I would find would be that the story only represents one kind of experience in agriculture, but actually it's not even about this village, it's a story about Schultz's version of the village that influenced the world," van Etten said, "and it's a wrong story."

The researcher explained that Schultz presented a distorted narrative which painted a picture of a population held back by a lack of access to modern varieties and fertilizers.

"What limited farms in that village wasn't technology, it was access to land, to markets, to credit," van Etten said, adding that Schultz's parable ignored ethnic tensions dominating market exchange, a main barrier for agricultural development.

Lessons for the future of agricultural research

In the paper, van Etten explained that Schultz told his own story rather than the narrative-as-lived of the farmers he portrayed and as a result, the Panajachel story neglected the institutional and ethnic reasons behind the farmers' struggles harnessing technological change.

The reason why it matters, van Etten said, is that these founding myths continue to influence how researchers and the general public perceive the Green Revolution.

"It helps to look back at history and look at the Green Revolution as a broad process of change that was not only about crop seeds and fertilizers," he said, adding that for example, historian Kapil Subramanian found in a 2015 study that the Green Revolution's impact

on productivity in India did not only rely on improved varieties.

There were also major infrastructural investments in rural electricity to power irrigation pumps, as well as strong government management of markets for inputs, credit and food grains.

According to van Etten, agricultural development is not just about technology but about a mix of things, in which markets and other institutions play the most important part.

"Our founding myth might be wrong, but if it gained influence, it was because of human choices," van Etten said, "These choices become enshrined in the way we run research organizations, but we can take a new course in defining the goals of where we should go next."

In addition, van Etten said that much of the work of CGIAR is already correcting old technology-centric thinking.

"We take a critical look at the delivery of new technologies, gender and inequality aspects, and look beyond technologies to policies and institutions," van Etten said, "Being aware about our own history helps to remove blinkers."

Another lesson was that in Panajachel, far from stagnation, there was a traditional knowledge base that was innovative in its own way.

"A lot of innovation was happening... The local varieties are not just the result of 10,000 years of slow work and in Panajachel, farmers got seeds from all over the place and tried them on their farms," van Etten said.

As agricultural research moves into a new phase, van Etten said, it's important to give farmers and their communities more agency to mix new technological solutions with their local knowledge.

"Agricultural research can tap into local inventiveness and amplify it and Schultz was wrong in painting farmers as helpless and stagnant," van Etten said.

"But Shultz was right in claiming that agricultural research is a good public investment and it can further accelerate farmer innovation, as we need all hands on deck to deal with current challenges, such as climate change."

More information: Jacob van Etten, Revisiting the adequacy of the economic policy narrative underpinning the Green Revolution, *Agriculture and Human Values* (2022). DOI: 10.1007/s10460-022-10325-2

Provided by The Alliance of Bioversity International and the International Center for Tropical Agriculture