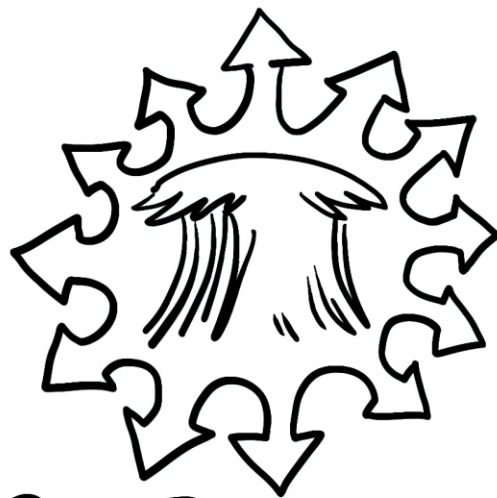
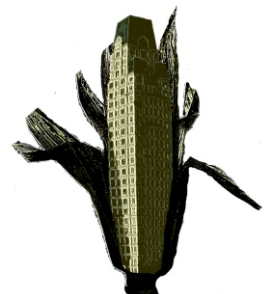


BETTER DISTRIBUTION



DISTRIBUTION

[HTTP://WWW.FEEDINGNINEBILLION.COM/](http://www.feedingninebillion.com/)



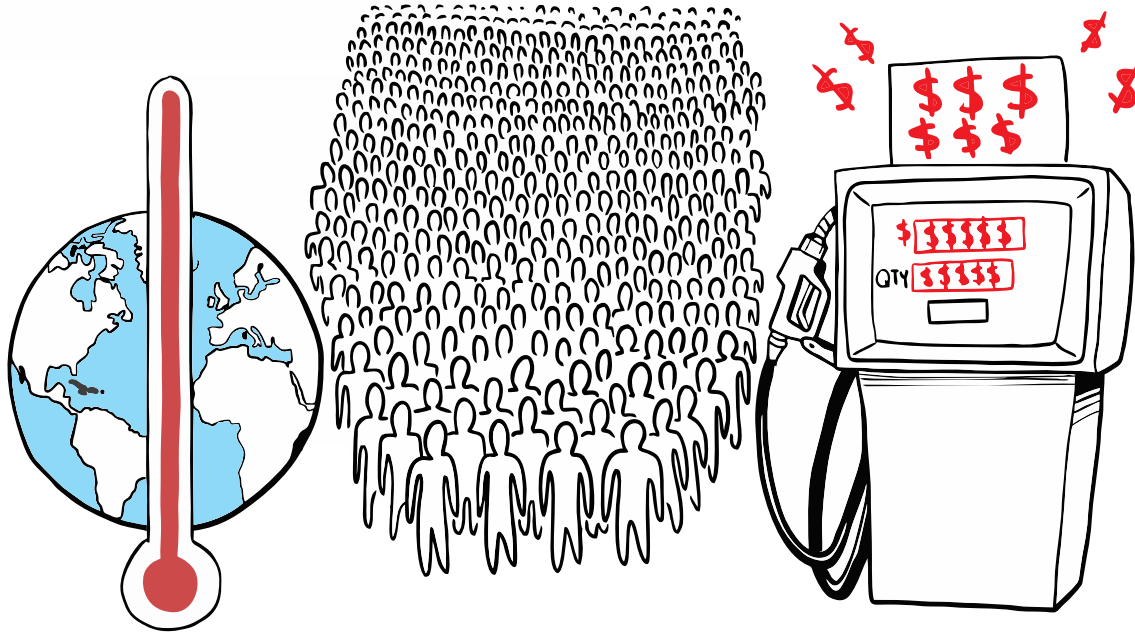
HELLO, MY NAME IS EVAN FRASER
AND I WORK AT THE UNIVERSITY OF GUELPH
IN ONTARIO CANADA.



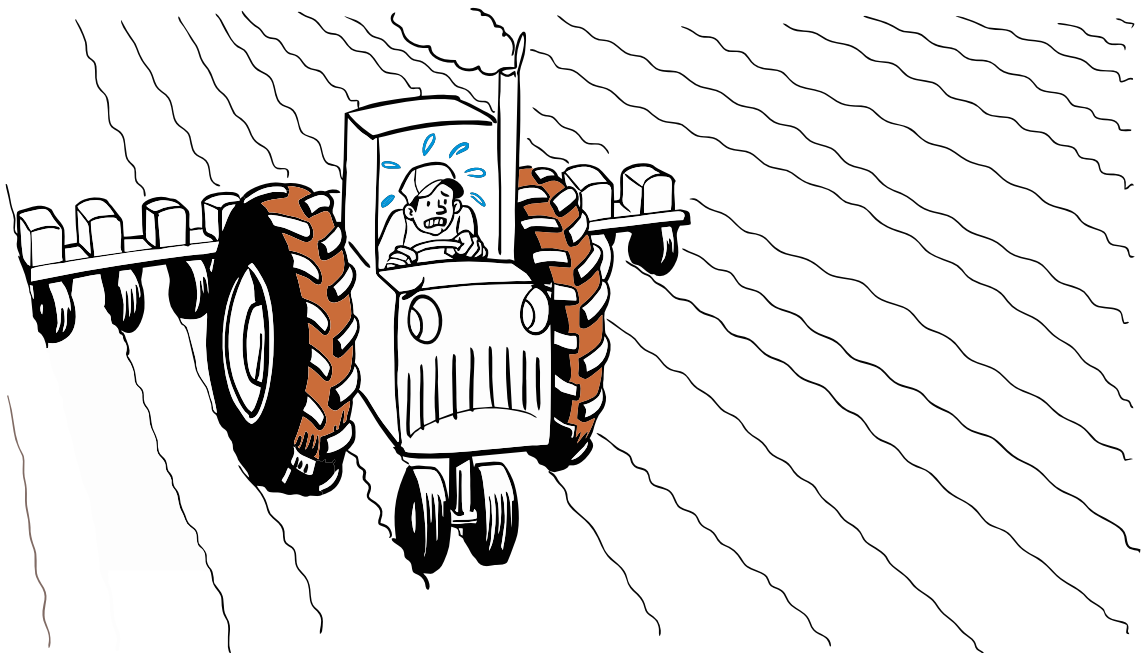
EVAN
FRASER



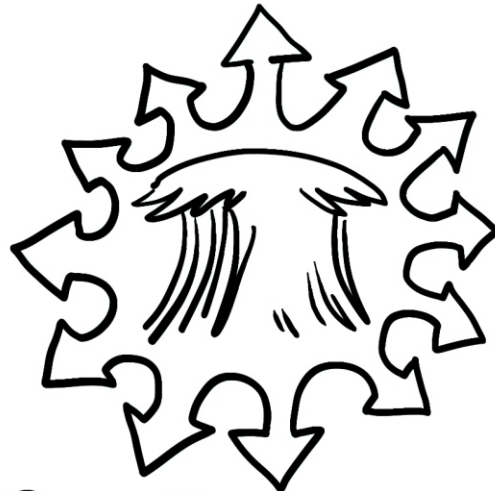
**AS ANYONE WHO HAS FOLLOWED THIS VIDEO SERIES KNOWS,
CLIMATE CHANGE, POPULATION GROWTH, AND HIGH ENERGY PRICES**



**MEAN THAT MANY EXPERTS WORRY FARMERS WILL STRUGGLE OVER
THE NEXT GENERATION TO PRODUCE ENOUGH FOOD FOR EVERYONE.**

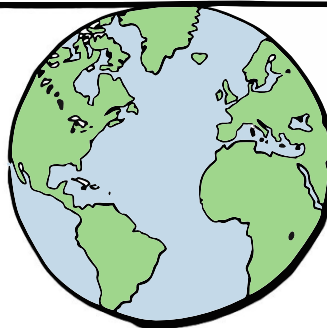
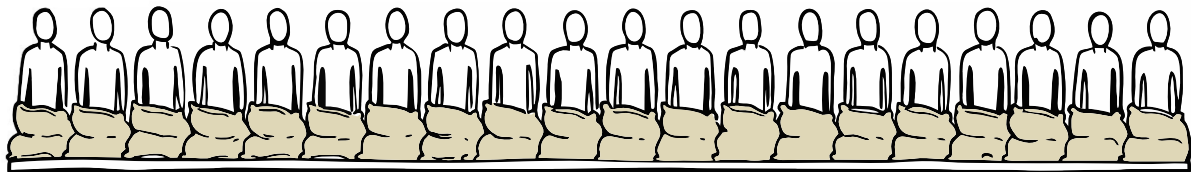
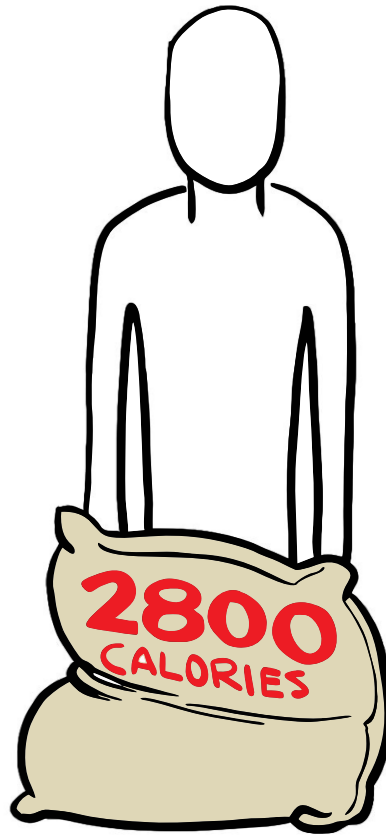


**THIS VIDEO LOOKS AT HOW BETTER
FOOD DISTRIBUTION CAN HELP US
OVERCOME THIS PROBLEM.**

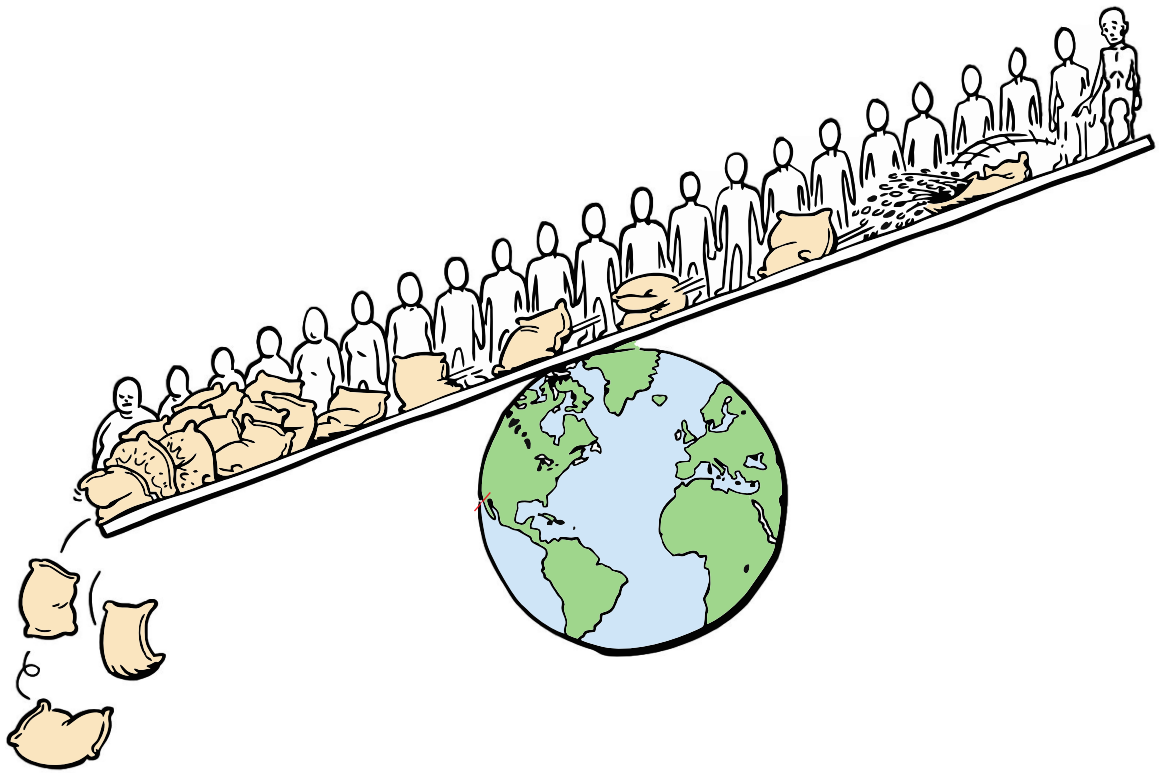


DISTRIBUTION

FOR INSTANCE, UNITED NATIONS DATA SHOW THERE ARE ALMOST 2800 CALORIES PRODUCED ON THE PLANET PER PERSON PER DAY.¹



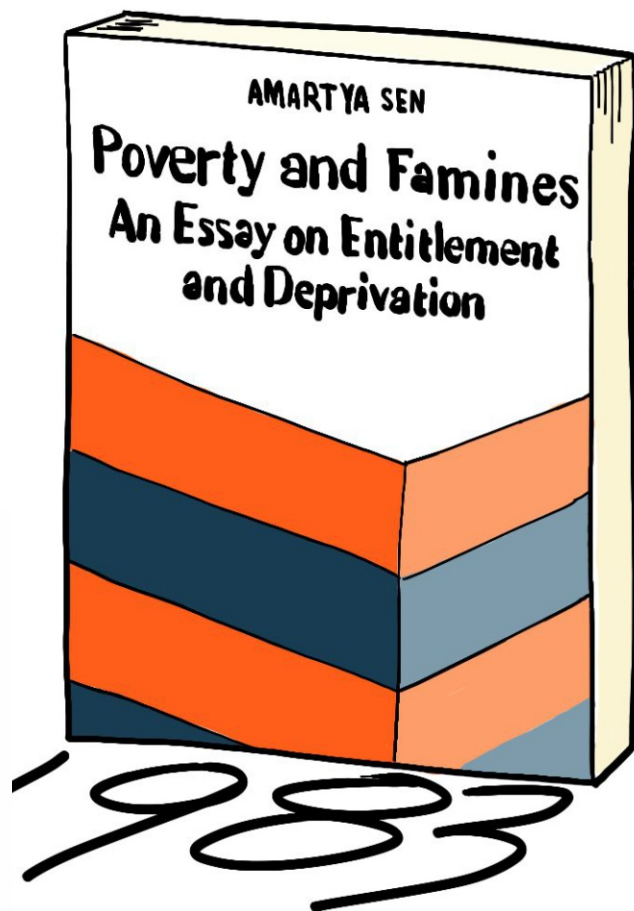
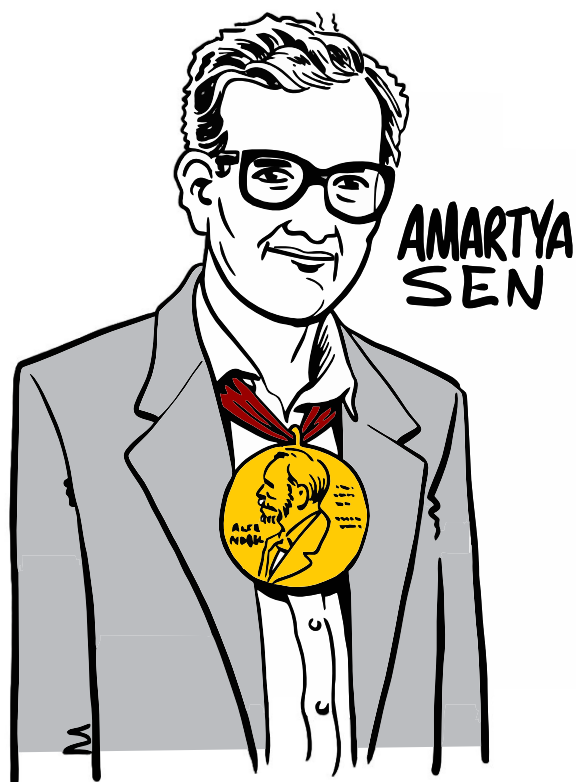
THIS IS MORE THAN ENOUGH FOR EVERYONE ALIVE TO LIVE A HEALTHY LIFE.²



HOWEVER, BECAUSE OUR FOOD IS UNEVENLY DISTRIBUTED, AND BECAUSE WE WASTE ROUGHLY ONE THIRD OF OUR FOOD³,

THERE ARE ABOUT 870 MILLION HUNGRY PEOPLE ON THE PLANET⁴.

MEANWHILE, ANOTHER 1.5 BILLION ADULTS ARE OVERWEIGHT OR OBESE⁵.

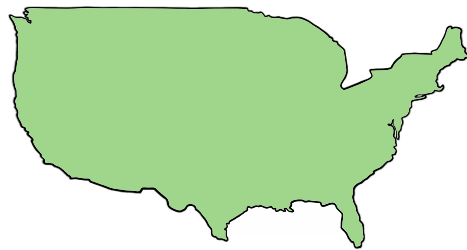


ARGUMENTS ABOUT FOOD DISTRIBUTION DATE BACK TO THE 1980S WHEN THE NOBEL LAUREATE AMARTYA SEN PUBLISHED THE GROUNDBREAKING BOOK POVERTY AND FAMINES. IN IT, SEN ARGUED THAT FOOD INSECURITY IS NOT CAUSED BY A LACK OF FOOD SO MUCH AS A LACK OF ECONOMIC AND POLITICAL POWER THAT ALLOWS CITIZENS TO DEMAND FOOD IN OUR GLOBAL MARKET THAT INCLUDES THE ULTRA POOR AND THE ULTRA RICH⁶.

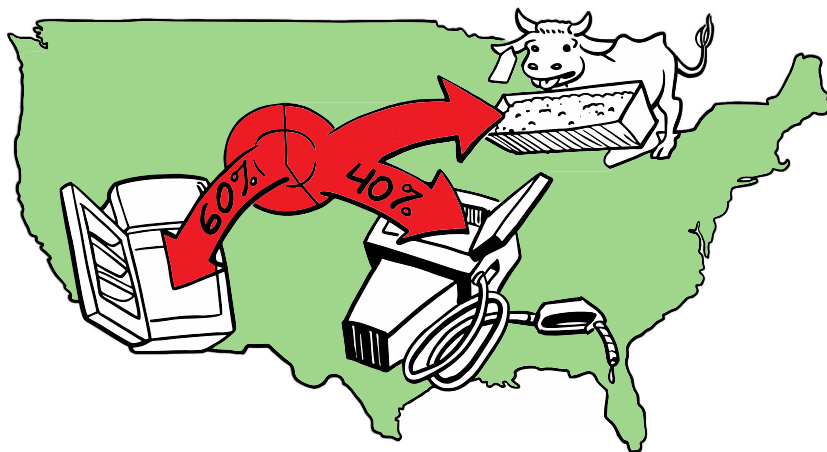
THERE ARE AT LEAST THREE WAYS EXPERTS THINK WE CAN CORRECT THIS IMBALANCE.



FIRST, SOME POINT OUT THAT SINCE THE US USES ABOUT 40% OF ITS CORN FOR ETHANOL⁷ WE HAVE A CONFLICT OF "FOOD VERSUS FUEL"^{8 9} AND MORE FOOD WOULD BE EATEN IF THE US DROPPED



BUT MANY DISAGREE. FOR INSTANCE, PRODUCING ETHANOL ONLY USES THE SUGAR IN THE CORN AND LEAVES PROTEIN RICH BY-PRODUCTS THAT ARE FED TO ANIMALS¹⁰. SO IT IS NOT AS IF THESE GRAINS, THE VAST MAJORITY OF WHICH WOULD HAVE BEEN USED FOR LIVESTOCK ANYWAYS, HAVE BEEN TAKEN OUT OF THE FOOD SYSTEM.



THE SECOND REASON IS MORE IMPORTANT. THE PEOPLE ON THE PLANET WHO NEED FOOD MOST ARE TOO POOR AND TOO REMOTE TO BE ABLE TO AFFORD IT.



SO IT'S NOT CERTAIN THERE WOULD BE ANY FEWER HUNGRY PEOPLE ON THE PLANET IF THE AMERICAN GOVERNMENT SIMPLY STOPPED SUBSIDIZING ETHANOL¹¹.

SECOND, IT'S CLEAR SOME PARTS OF THE WORLD HAVE TOO MUCH FOOD, AND SOME TOO LITTLE,

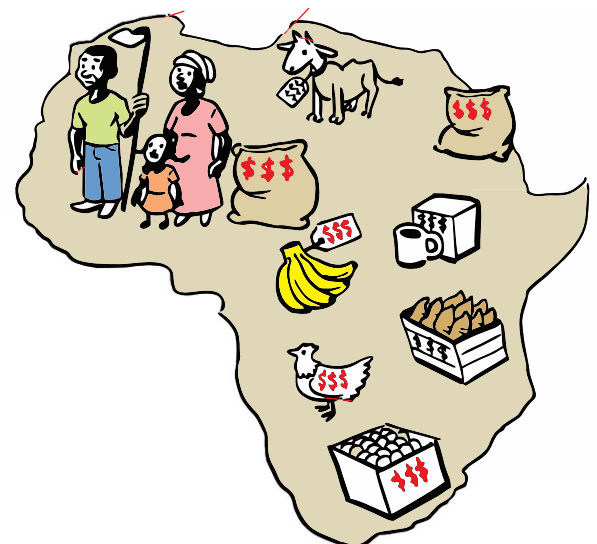


SO SHOULDN'T IT BE POSSIBLE TO SIMPLY EXPORT FOOD FROM SURPLUS REGIONS (LIKE THE US AND CANADA) TO AREAS THAT DON'T HAVE ENOUGH (LIKE AFRICA), SAY, BY GIVING IT AWAY AS FOOD AID?

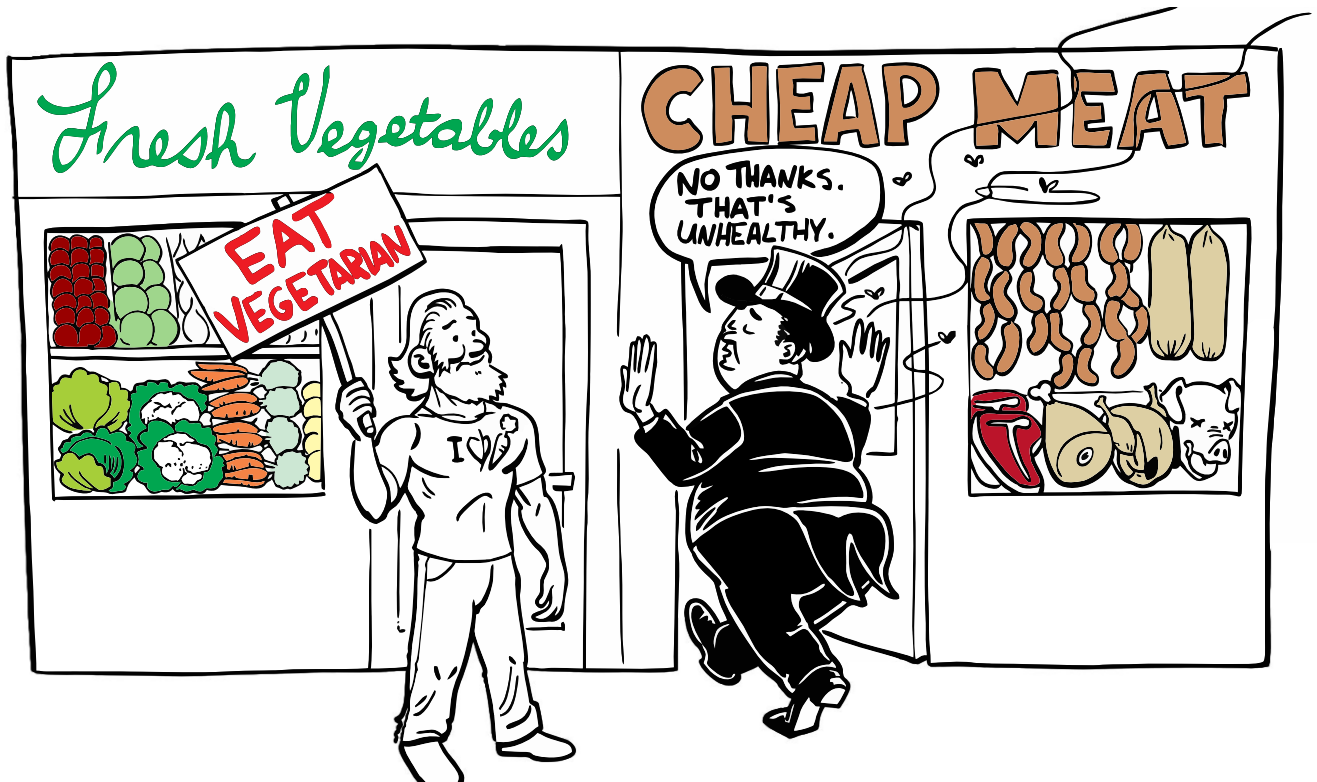


UNFORTUNATELY, FOOD AID DRIVES DOWN AGRICULTURAL PRICES IN THE DEVELOPING WORLD, AND THIS HURTS FARM INCOMES, WHICH IS IMPORTANT SINCE MOST OF THE WORLD'S POOR ARE FARMERS.

AS A RESULT, MOST DEVELOPMENT AGENCIES ARE MOVING AWAY FROM USING FOOD AID EXCEPT AS SHORT-TERM HUMANITARIAN RELIEF¹².

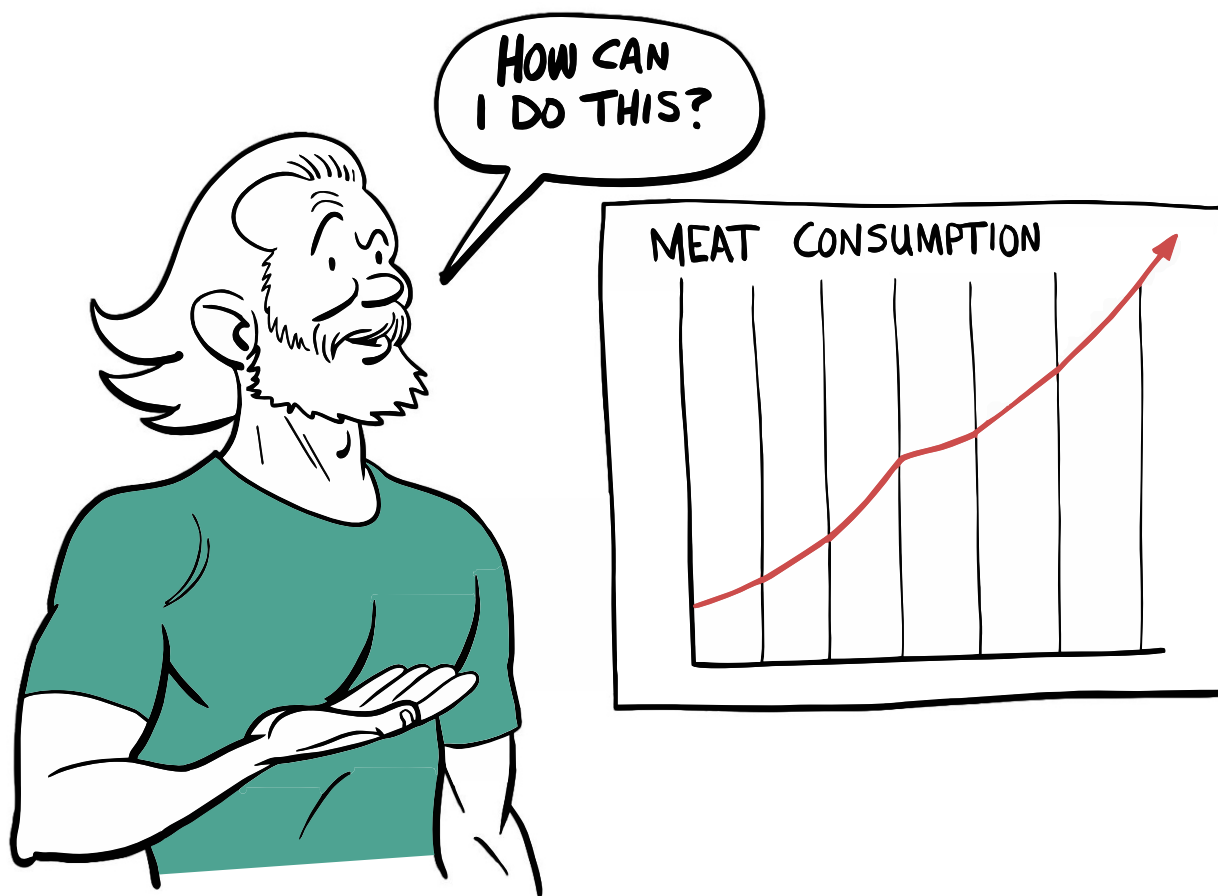


A THIRD STRATEGY IS FOR WEALTHY CONSUMERS TO SIMPLY EAT LESS MEAT, AND IN PARTICULAR MEAT THAT COMES FROM RESOURCE INTENSIVE "FACTORY" FARMS.

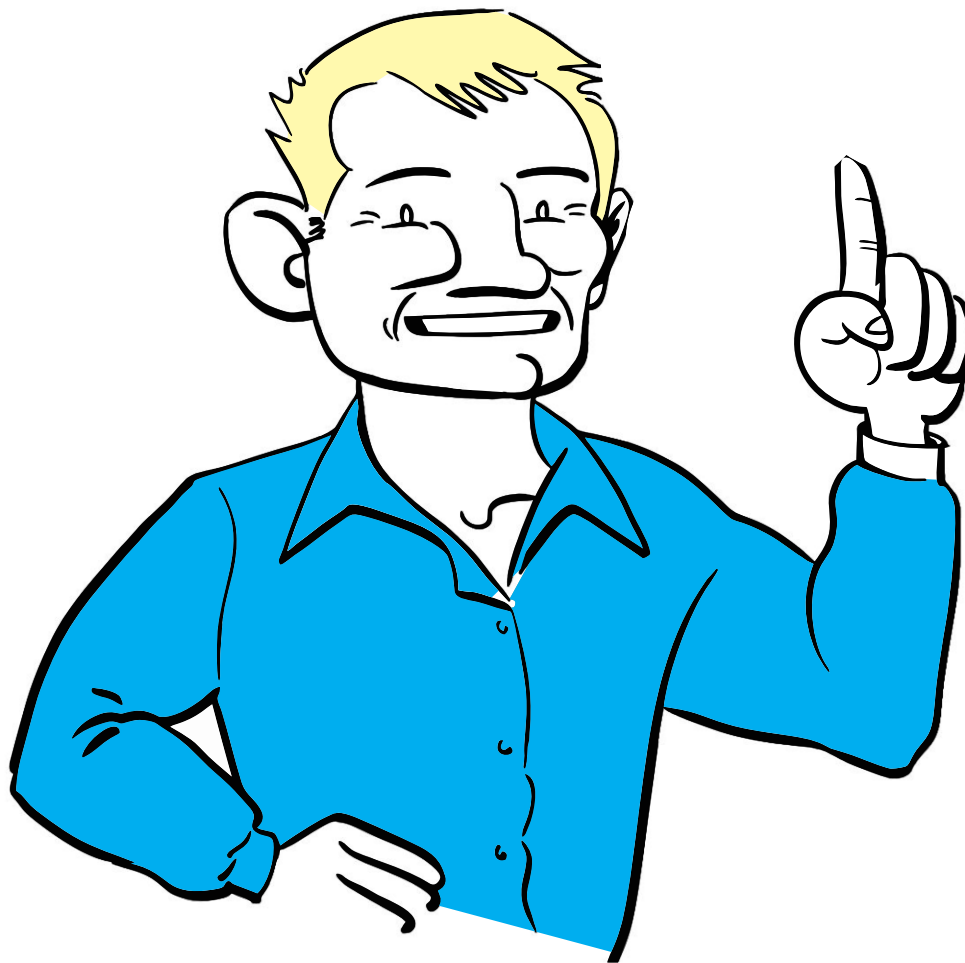


IT TAKES MANY KILOGRAMS OF GRAIN TO PRODUCE A MUCH SMALLER AMOUNT OF MEAT¹³ AND SO ADVOCATES FOR VEGETARIAN DIETS ARGUE THAT OUR GRAINS WOULD GO FURTHER IF THEY WERE EATEN DIRECTLY BY PEOPLE INSTEAD OF BEING FED TO ANIMALS¹⁴.

THE PROBLEM WITH THIS APPROACH, HOWEVER, IS HOW TO DO THIS. GLOBAL DATA SHOW MEAT AND DAIRY CONSUMPTION RISING FAST¹⁵, AND WHILE IT MIGHT BE NICE TO THINK THAT IN THE FUTURE HUMANITY'S DIET WILL BE LESS TAXING, FOR NOW THERE IS NO EVIDENCE TO SUGGEST THIS IS GOING TO HAPPEN ANY TIME SOON.

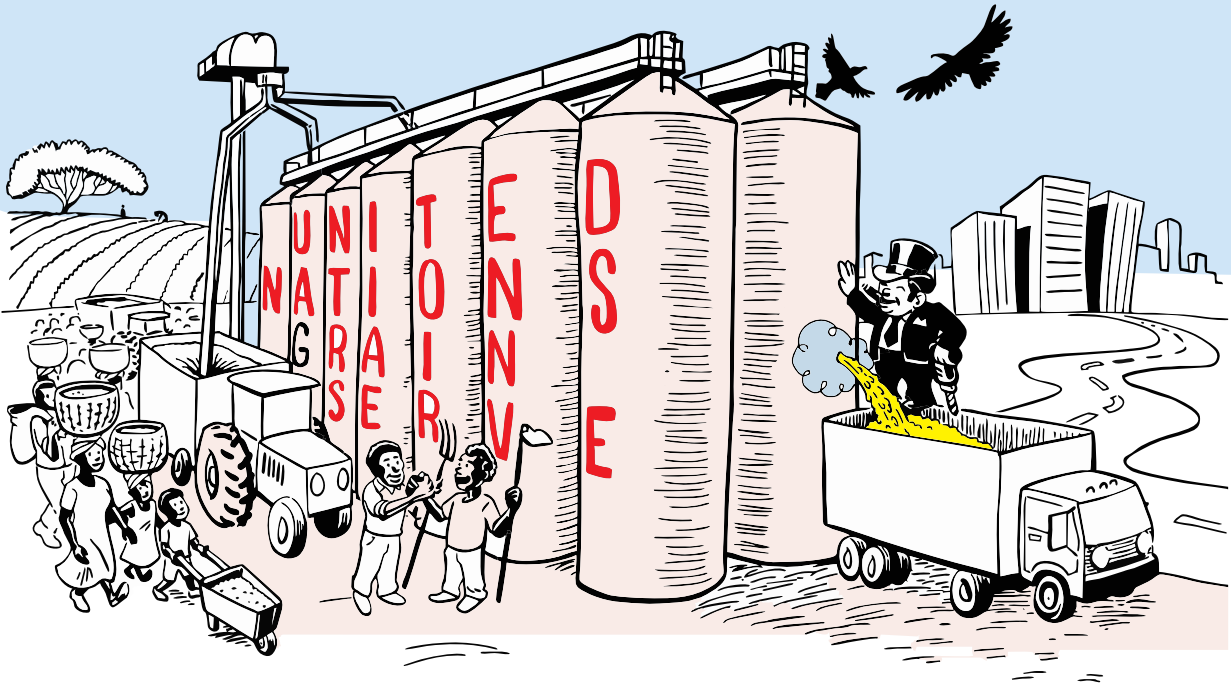


**BUT THIS DOESN'T MEAN THAT
THERE IS NOTHING WE CAN DO TO
BETTER DISTRIBUTE FOOD.**

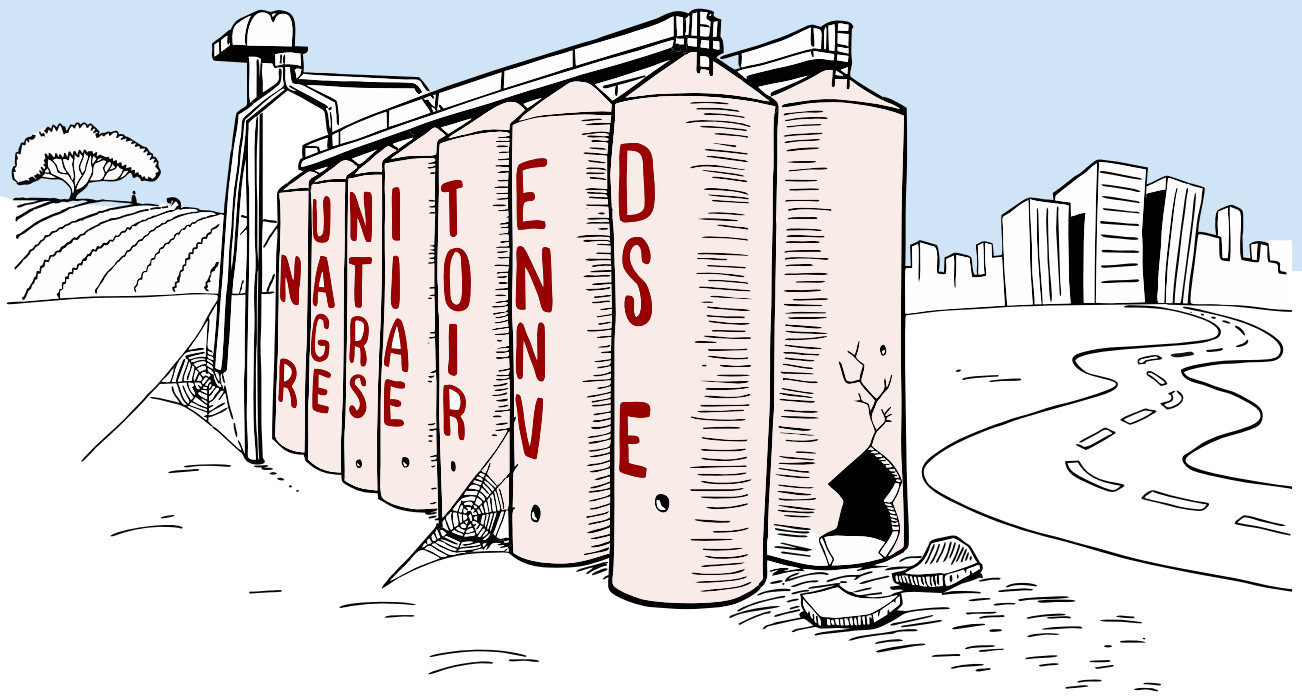




ONE STRATEGY IS TO MAINTAIN LARGER FOOD RESERVES AS A BUFFER AGAINST SHORT FALLS. IN THE PAST, THE UN FUNDED STRATEGIC GRAIN RESERVES THAT AFRICAN NATIONS WOULD USE TO KEEP PRICES LEVEL IN TIMES OF CROP FAILURE¹⁶.



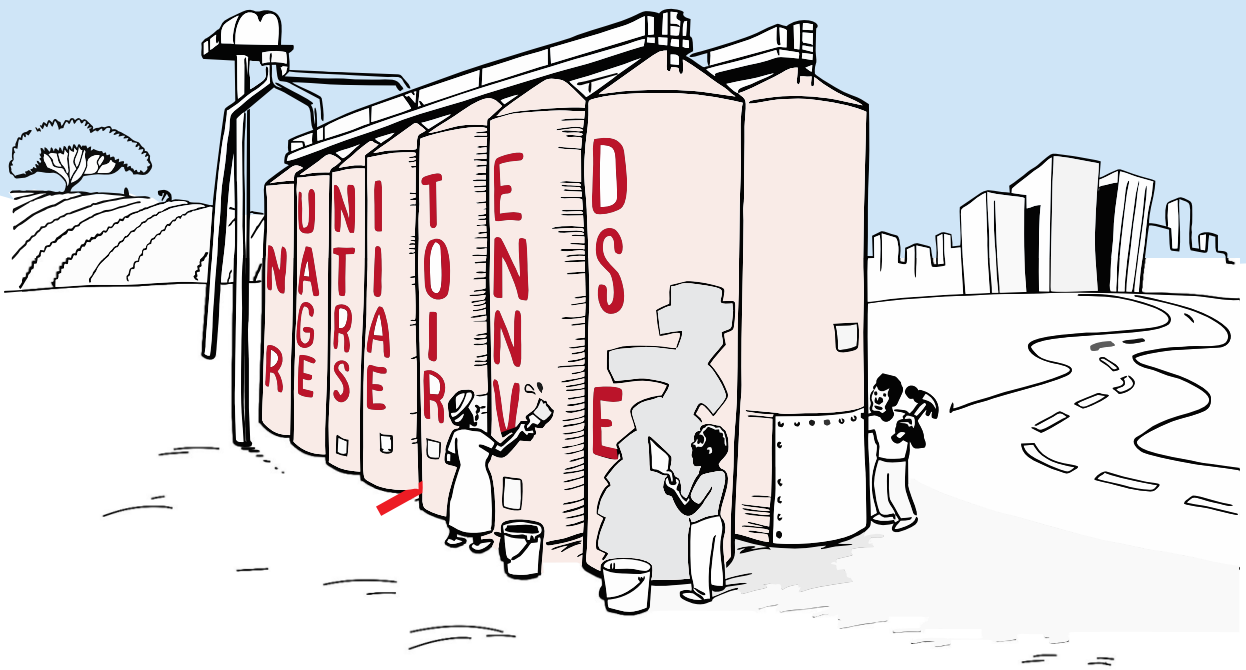
BUT THIS PROGRAM WAS PRONE TO CORRUPTION AND MISMANAGEMENT, AS WELL AS BEING EXPENSIVE, SO IT HAS FALLEN OUT OF USE¹⁷.



BECAUSE OF THIS GLOBAL AND NATIONAL FOOD STOCKS HAVE FALLEN OVER THE PAST 10 YEARS TO THE POINT WHERE TODAY MANY WORRY WE ARE JUST ONE BAD HARVEST AWAY FROM A MAJOR HUMANITARIAN CATASTROPHE¹⁸.

AS A RESULT, CALLS ARE GROWING TO ESTABLISH FOOD RESERVES THAT WOULD KEEP PRICES LEVEL.

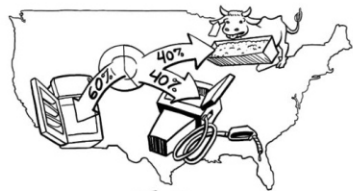




WHILE THERE IS DISCUSSION AS TO WHO SHOULD OWN SUCH STOCKS, AND HOW THEY SHOULD BE GOVERNED, THE FACT REMAINS THAT HAVING ROBUST STOCKS IS A CRUCIAL STRATEGY TO PROMOTE A RESILIENT GLOBAL FOOD SYSTEM¹⁶.

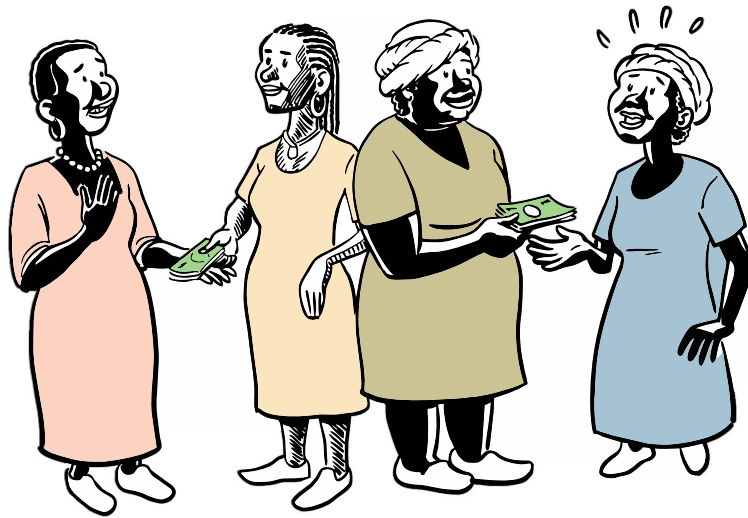
IN THE END, THOUGH, ARGUMENTS ABOUT FOOD STORAGE, BIOETHANOL AND NORTH AMERICAN DIETS NEED TO BE SEEN AGAINST THE BIGGER ISSUE OF POVERTY.

POVERTY





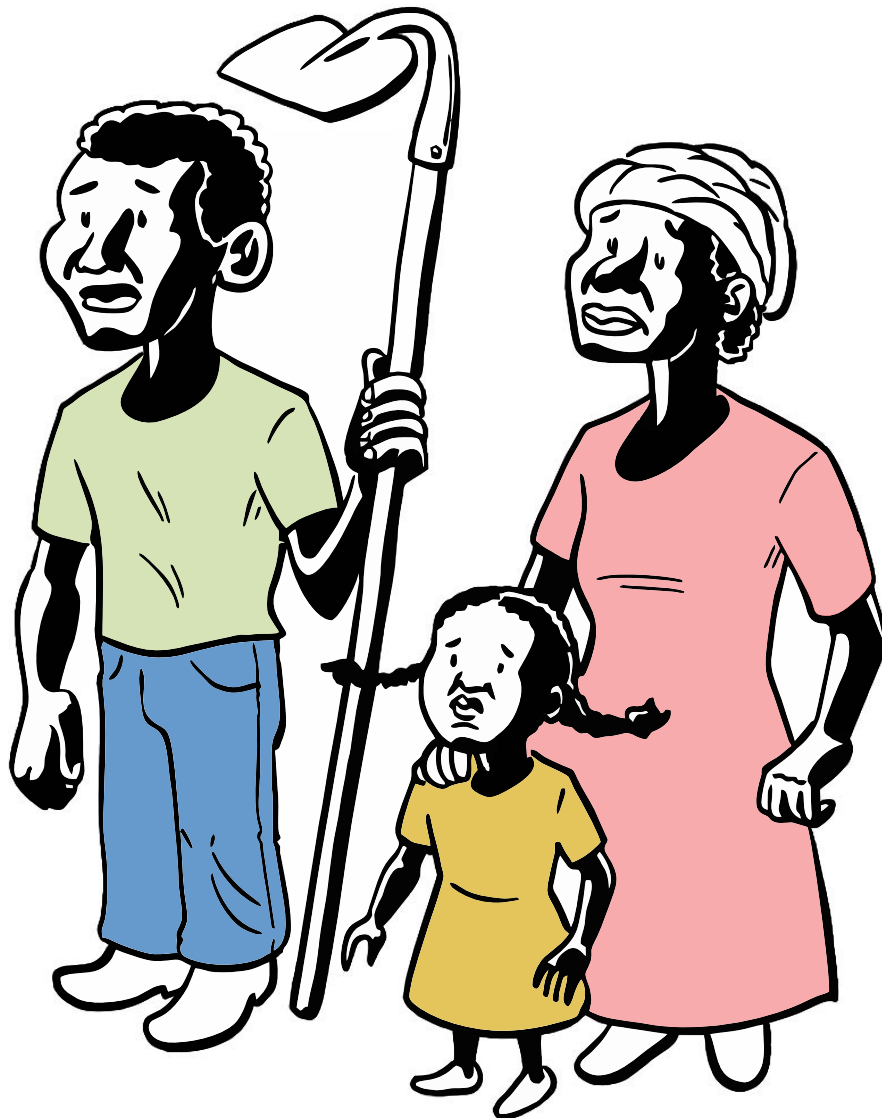
ALL THE FOOD IN THE WORLD WON'T
HELP IF PEOPLE
ARE TOO POOR TO AFFORD IT²⁰.



THEREFORE, ALONG WITH THE STRATEGIES NOTED ABOVE, WE ALSO NEED TO HAVE PROGRAMS THAT WORK WITH THE POOR TO DEVELOP SMALL-SCALE ENTERPRISES, SUCH AS LOANING WOMEN IN AFRICA ENOUGH MONEY TO SET UP MARKET GARDENS, AND START RAISING SMALL SCALE LIVESTOCK LIKE RABBITS, CHICKENS OR GOATS^{21 22}.

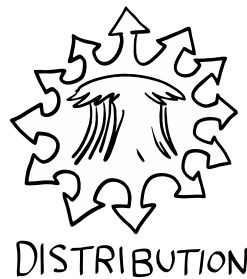


PROPERLY DONE, SUCH STRATEGIES GIVE POOR FARMERS (WHO ARE AMONGST THE POOREST OF THE POOR AROUND THE WORLD) THE CAPABILITY TO LIFT THEMSELVES OUT OF POVERTY²³.

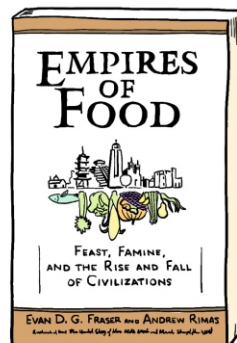


IF YOU ARE INTERESTED IN LEARNING MORE, YOU MIGHT BE KEEN TO CHECK OUT MY RECENT BOOK EMPIRES OF FOOD.

ALSO, YOU CAN FIND ME ON YOUTUBE, FACEBOOK AND TWITTER WHERE I REGULARLY POST ABOUT ISSUES RELATING TO GLOBAL FOOD SECURITY. AND THE WEBSITE WWW.FEEDINGNINEBILLION.COM HAS ANNOTATED SCRIPTS ALONG WITH REFERENCES AND OUR BLOG.



FeedingNineBillion.com



ENDNOTES:

¹While global hunger remains a devastating problem, progress has been made in recent years to decrease the number of people suffering from a lack of food. This website provides definitions for many frequently used terms in the discussion of hunger, as well as information on the causes and solutions to widespread hunger. "2013 World Hunger and Poverty Facts and Statistics." World Hunger Education Service"
http://www.worldhunger.org/articles/Learn/world_hunger_facts_2002.htm

²Canada's Food Guide provides the estimated daily caloric requirements of a person, according to their age, sex, and level of physical activity. "Estimated Energy Requirements." *Health Canada*. Canadian Government:
http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/basics-base/1_1_1-eng.php

It is important to note that energy requirements do vary on an individual level, but on average, the FDA recommends the daily consumption of 2,000 calories:
http://www.fda.gov/ohrms/dockets/ac/04/briefing/4039b1_01_calories%20count.pdf

³This report outlines the causes of food waste throughout the entire food system, in both developed and developing regions. For a brief summary of the report, read pages v-vi. Gustavsson, Jenny, Christel Cederberg, Ulf Sonesson, Robert Van Otterdijk, and Alexandre Maybeck. *Global Food Losses and Food Waste - Extent, Causes, and Prevention*. Rep. FAO, 2011:
http://www.fao.org/fileadmin/user_upload/sustainability/pdf/Global_Food_Losses_and_Food_Waste.pdf

⁴This news article by the FAO outlines the current state of global hunger, as well as the recent progress that has been made in decreasing the number of people worldwide suffering from chronic hunger. "Globally almost 870 million chronically undernourished" *Food and Agriculture Organization*. United Nations, 9 Oct. 2012:
<http://www.fao.org/news/story/en/item/161819/>

⁵Of course there is considerable debate on these statistics. One of the world's authorities on this is B. Popkin who argues that 1.5 billion adults worldwide in 2008 were afflicted by either being obese or over weight. The academic reference for this is: POPKIN, B. M., ADAIR, L. S. & NG, S. W. 2012. Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition Reviews*, 70, 3-21.

This is confirmed by the World Health Organization who also states that there are about 500 million obese adults. The World Health Organization website also provides some background on how they calculate these figures. Please see: <http://www.who.int/mediacentre/factsheets/fs311/en/>

⁶In this book, Sen explores the political and social causations of chronic hunger and famine. SEN, A. 1981. *Poverty and Famines*, Oxford, Clarendon Press. This book is a must read for anyone with an interest in international development.

⁷This opinion piece from the New York Times discusses the wide-reaching implications of American biofuel policy. Colin A., and Henry I. Miller. "Corn for Food, Not Fuel." *New York Times*. N.p., 30 July 2012: http://www.nytimes.com/2012/07/31/opinion/corn-for-food-not-fuel.html?_r=0

⁸See the following: Kazinform (2008), "Biofuels major cause of global food riots", Kazakhstan National Information Agency, April 11.

⁹See the following: Brown, L. (2008), *Starving for Fuel: How Ethanol Production Contributes to Global Hunger*, Global Briefing.

¹⁰This publication provides an overview of US corn production, both in terms of the crop's increasing importance in the international economy, and some examples of the many uses corn has in our everyday lives. NATIONAL CORN GROWERS ASSOCIATION 2013. *World of Corn. Unlimited Possibilities*:
<http://www.ilcorn.org/file/510>

¹¹Food prices have been steadily rising both within the US and globally, as explained in this opinion piece. Carter, Colin A., and Henry I. Miller. "Corn for Food, Not Fuel." *New York Times*:
http://www.nytimes.com/2012/07/31/opinion/corn-for-food-not-fuel.html?_r=0

¹²For instance, in 2012 the US' development agency USAID made a major policy shift away from using food aid and towards longer term poverty reduction and development. These changes are described on the following web site:
<http://www.usaid.gov/what-we-do/agriculture-and-food-security/increasing-food-security-through-feed-future>

¹³Raising livestock takes eight times more fossil-fuel energy than producing a similar amount of food using plant based crops, and meat protein is only marginally more nutritious than plant protein, as discussed in this newspaper article. U.S. Could Feed 800 Million People with Grain That Livestock Eat, Cornell Ecologist Advises Animal Scientists." *Cornell Chronicle*. Cornell University:
<http://news.cornell.edu/stories/1997/08/us-could-feed-800-million-people-grain-livestock-eat>

¹⁴FAO (2008), "Assessment of the world food security and nutrition situation", Report presented by the Committee on World Food Security at the Thirty-fourth Session, Rome, October 14-17.

¹⁵With growing consumer prosperity throughout the world, there is a rising trend in the demand for meat. This academic journal article discusses the problems that will arise with global diets becoming more reliant on animal protein.

DE BAKKER, E. & DAGEVOS, H. 2012. Reducing meat consumption in today's consumer society: Questioning the citizen-consumer gap. *Journal of Agricultural and Environmental Ethics*, 25, 877-894. <http://edepot.wur.nl/184023>

¹⁶This paper explores some of the political and technical causes of the 2002 famine in Malawi, as well as discussing the evolution of Strategic Grain Reserves. DEVEREUX, S. 2002. The Malawi Famine of 2002. *IDS Bulletin*, 33, 70-78.

¹⁷See previous footnote for background.

¹⁸Our food system has been successful because of a delicate balance between inputs and outputs, but some worry that growing food demand, and climatic change could tip this balance towards disaster.

Lean, Geoffrey. "One Poor Harvest Away from Chaos." *The Telegraph*
<http://www.telegraph.co.uk/earth/earthcomment/geoffrey-lean/8247029/One-poor-harvest-away-from-chaos.html>

¹⁹The following links to an organization devoted to establishing a world food reserve
<http://www.world-community-for-food-reserves.org/>

²⁰See the following report: FAO (2008), "National policy responses to high food prices", FAO's Economic and Social Development Department (ES), Policy Brief 1. FAO (2008g), "Soaring food prices: facts, perspectives, impacts and actions required", available at:
<http://reliefweb.int/rw/lib.nsf/db900SID/PANA-7FSG8E?OpenDocument>

²¹This is something I wrote about for an op-ed in the Guardian:
<http://www.theguardian.com/global-development-professionals-network/2013/jul/31/feeding-nine-billion-food-security-rwanda>

²²Here is an academic article on the same:
Hovorka, Alice J.(2006)'The No. 1 Ladies' Poultry Farm: A feminist political ecology of urban agriculture in Botswana', *Gender, Place & Culture*,13:3,207 — 225

²³While such approaches may help poor farmers, it is also important to note that many of the world's poor, such as unemployed youth in the cities in the developing world, have no access to land. Other strategies are needed to help such people. Helping empower these people requires very different strategies, hence we must avoid the temptation to assume that there are any silver bullets or that there are any one-size-fits all approaches to tackle these issues.

CREDITS

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FUNDING THROUGH THE SSHRC