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# FAITH OVER FEAR: A LESSON FOR THE NATION FROM AMERICAN AGRICULTURE†

TOM VILSACK\* & SARAH BITTLEMAN\*\*

## INTRODUCTION

As we write this article, most of the countryside is in the midst of what appears to be the worst drought to hit the continental U.S. in over twenty years. We have yet to know what the final effect of the drought will be on the corn and soybean crops, as well as other crops and livestock. But what we do know is that while the government stands ready to help those in need—both financially and technically—ultimately it is the American attitude of strength and survival, over fear and failure, that will see us through.

The Bible, both Old and New Testaments, contains many stories of fear and faith. And while an atheist or humanist may be inclined to dismiss prayer as an ineffectual response to drought, there are lessons from the Bible that speak to the human experience and help people endure hard times. Ultimately, the choice always seems to fall between fear in the current situation and faith in our abilities to make the situation better.

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† Adapted from the 160th Landon Lecture Series Keynote Speech by Secretary Vilsack, April 10, 2012, McCain Auditorium, Kansas State University.

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A New Testament Bible story that encapsulates the power of fear and faith involves Jesus and his disciples in a boat in the middle of the Sea of Galilee. In the story, Jesus is sleeping while his disciples watch an approaching storm become more intense. Finally, fear overcomes the disciples as the sea roils. They cry out and awaken Jesus, “Teacher, don’t you care that we will drown?” Jesus chides them, “Why are so you afraid? Do you still have no faith?” Through the strength of his own faith that he is loved and that God would not forsake him on the sea to drown, Jesus orders the waters to calm and the wind to die down.<sup>1</sup> Faith trumps fear in that story, not just Jesus’ faith in God but his faith in his own abilities to quiet the waters.<sup>2</sup>

As America slowly recovers, first from a deep and painful recession, and now from a drought, fear regarding our future has been ever present. People fear for their ability to keep their jobs,<sup>3</sup> for their ability to keep their homes,<sup>4</sup> and for their ability to make ends meet with the rising costs of gas, food,<sup>5</sup> and health care.<sup>6</sup> People also fear for their children’s future, wondering if achieving the American dream will remain a possibility.<sup>7</sup>

You may be asking yourself: What does the Department of Agriculture know about fear or faith? In a time when so many

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1. Mark 4:31–41 (New International Version).

2. Coty Pinckney, *Fear or Faith?: A Sermon on Mark 4:35–5:20*, EXPOSITORY SERMONS & WORSHIP RES. (Sept. 26, 1999), <http://www.expository.org/mark5a.htm>.

3. See Sarah A. Burgard et al., *Perceived Job Insecurity and Worker Health in the United States*, 69 SOC. SCI. & MED. 777, 777–78 (2009); Lindsay Fortado, *U.S. Consumer Confidence Fell on Job Outlook, Nielsen Says*, BLOOMBERG NEWS, July 1, 2012, <http://www.bloomberg.com/news/2012-07-01/u-s-consumer-confidence-fell-on-job-outlook-nielsen-says.html>.

4. See David Coates, *The Unfinished Business of the Obama Administration: The Foreclosure Crisis*, HUFFINGTON POST: THE BLOG (July 10, 2012, 10:13 AM), [http://www.huffingtonpost.com/david-coates/the-unfinished-business-o\\_b\\_1661745.html](http://www.huffingtonpost.com/david-coates/the-unfinished-business-o_b_1661745.html); NeighborWorks Am., *Foreclosure Statistics*, FDIC.GOV, [http://www.fdic.gov/about/comein/files/foreclosure\\_statistics.pdf](http://www.fdic.gov/about/comein/files/foreclosure_statistics.pdf) (last visited Mar. 6, 2013).

5. See Kim Severson, *A Bigger Bite*, N.Y. TIMES, Apr. 24, 2011, at WK4; Christine Hauser, *Rising Gas and Food Prices Push U.S. Inflation Higher*, N.Y. TIMES, May 14, 2011, at B3.

6. See *U.S. Health Care Costs*, KAISEREDU.ORG, <http://www.kaiseredu.org/Issue-Modules/US-Health-Care-Costs/Background-Brief.aspx> (last visited Mar. 6, 2013); Noam N. Levey, *Soaring Cost of Healthcare Sets a Record*, L.A. TIMES, Feb. 4, 2010, <http://articles.latimes.com/2010/feb/04/nation/la-na-healthcare4-2010feb04>.

7. See Linton Weeks, *With the American Dream Comes the Nightmare*, NAT’L PUB. RADIO (May 30, 2012), <http://www.npr.org/2012/05/30/152672803/with-the-american-dream-comes-the-nightmare>.

institutions and their leaders have violated our trust,<sup>8</sup> the U.S. Department of Agriculture is immersed in amazing and deeply inspiring stories of the renewal and revitalization of rural America, led by those who work on the land. Theirs is an example which renews our faith in ourselves and in America.

### I. WE'VE DONE THIS BEFORE; WE CAN DO THIS AGAIN

During the decade of the 1980s, rural America and American agriculture experienced its own deep recession.<sup>9</sup> Declining market prices left many farmers and ranchers unable to make the payments on debt incurred<sup>10</sup> in the purchase of overpriced land.<sup>11</sup> Foreclosures and farm sales occurred on a regular basis.<sup>12</sup> Young people left their ancestral homes and storefronts in once thriving towns closed their doors.<sup>13</sup> Fear took hold and stifled any thought of opportunity.

Fortunately, the farmers and ranchers who remained overcame that fear with faith in themselves and in the power of the land to create new opportunity. Those farmers and ranchers slowly reduced their debt.<sup>14</sup> They accepted the challenge to change and to be educated on how to do what they had been doing, only better.<sup>15</sup> They saved and sacrificed so they could

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8. See Jim Zarroli, *Madoff's Victims May Still Have More to Lose*, NAT'L PUB. RADIO (Dec. 13, 2010), <http://www.npr.org/2010/12/13/132032517/madoff-s-victims-may-still-have-more-to-lose>; *60 Minutes: The Case Against Lehman Brothers* (CBS television broadcast Apr. 22, 2012), available at [http://www.cbsnews.com/8301-18560\\_162-57417397/the-case-against-lehman-brothers/](http://www.cbsnews.com/8301-18560_162-57417397/the-case-against-lehman-brothers/).

9. Barry J. Barnett, *The U.S. Farm Financial Crisis of the 1980s*, 74 AGRIC. HIST. 366, 366 (2000).

10. Paul S. Estenson, *Farm Debt and Financial Instability*, 21 J. ECON. ISSUES 617, 621-22 (1987).

11. Don Kendall, *Farm Property Jumps 16 but Boom May Lose Steam in 1980*, MADISON COURIER, Feb. 6, 1980, at B1; R.C. Longworth, *Down on the Farm*, LAKE-LAND LEDGER, Feb. 10, 1985, at 1A and 8A.

12. See Keith Schneider, *Agriculture Dept. to Order Farmers to Pay Late Debt*, N.Y. TIMES, Jan. 1, 1986, at 1; *Iowa Declares Halt to Farm Foreclosures*, MILWAUKEE JOURNAL, Oct. 2, 1985, at 4.

13. See Sharon Schmickle, *Farm Crisis Has Rural Stores Closing Doors Across the Midwest*, CHI. TRIB., Jan. 5, 1988, available at [http://articles.chicagotribune.com/1988-01-05/news/8803190949\\_1\\_small-towns-norwest-retail-sales](http://articles.chicagotribune.com/1988-01-05/news/8803190949_1_small-towns-norwest-retail-sales); *Small Farming Community Struggles to Survive Exodus*, TIMES DAILY (Florence, Ala.), Sept. 26, 1987, at 6B.

14. See Don Kendall, *U.S. Farmers Recovering but Drought Leaves Lingering Problems*, FREE LANCE-STAR (Fredericksburg, Va.), Oct. 31, 1988, at 16; Don Kendall, *Ag Report: Farmers' Debts, Assets Reduced*, GAINESVILLE SUN, July 30, 1986, at 3B.

15. See *Ag Education Comes in From the Fields*, OBSERVER REP. (Washington, Pa.), Nov. 25, 1983, at C5.

invest in new seed technologies and cropping systems.<sup>16</sup> Their practices led to the development of new farm implements.<sup>17</sup> The effect of this uniquely American ingenuity was more efficient, more productive, and more profitable farming and ranching operations across the country.<sup>18</sup>

In fact, since the decade of the 1980s, American agriculture has become one of the most productive aspects of our economy and is now responsible for supporting one out of every twelve jobs in America.<sup>19</sup> American agriculture's increased productivity saw exports and trade surpluses grow to record levels, supporting nearly a million jobs alone in trade.<sup>20</sup>

Markets have also expanded at home. Direct-to-consumer sales in local and regional food markets grew dramatically in the last decade.<sup>21</sup> More consumers desire to know where their food comes from, who grew it, and how it was grown.<sup>22</sup> The market for organic products reached almost \$30 billion<sup>23</sup>

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16. See *Success Stories Harder to Find*, ELLENSBURG DAILY REC., Nov. 19, 1986, at 5; *Conservation Plan Required*, LUDINGTON DAILY NEWS, Feb. 17, 1988, at 6.

17. *Sales Boost Expected for Farm Equipment*, ST. PAUL PIONEER PRESS, Oct. 11, 1988, at 10C; *Senate Approves Exemptions for Equipment*, DAILY UNION (JUNCTION CITY, Ka.), Apr. 29, 1988, at 11.

18. See Table 1—*Indices of Farm Output, Input, and Total Factor Productivity for the United States, 1948-2009*, U.S. DEP'T. OF AGRIC., <http://www.ers.usda.gov/data-products/agricultural-productivity-in-the-us.aspx> (last updated Jan. 23, 2012); ECONOMIC REPORT OF THE PRESIDENT 419 (1989), available at [http://fraser.stlouisfed.org/docs/publications/ERP/1989/ERP\\_1989.pdf](http://fraser.stlouisfed.org/docs/publications/ERP/1989/ERP_1989.pdf).

19. See KEITH O. FUGLIE ET AL., PRODUCTIVITY GROWTH IN U.S. AGRICULTURE (2007), available at [http://www.ers.usda.gov/media/201254/eb9\\_1\\_.pdf](http://www.ers.usda.gov/media/201254/eb9_1_.pdf); *Annual State Personal Income and Employment*, U.S. BUREAU OF ECON. ANALYSIS, <http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1> (last visited Mar. 6, 2013) (noting that U.S. Government data are available for direct farm employment and for employment in selected industries or sectors related to agriculture as the Bureau of Economic Analysis publishes data on the number of full- and part-time jobs for agricultural and related industry sectors).

20. *USDA Reports High Agricultural Trade Surplus for 2012 but a Cut in 2011 Corn Exports*, AGRI-PULSE (Sept. 2, 2011, 8:07 AM), [http://www.agri-pulse.com/ERS\\_export\\_report\\_8312011.asp](http://www.agri-pulse.com/ERS_export_report_8312011.asp).

21. *Farmers Market Growth: 1994–2012*, U.S. DEP'T OF AGRIC., <http://www.ams.usda.gov/AMSV1.0/> (search "Farmers Market Growth"; then follow "Agricultural Marketing Service - Farmers Market Growth") (last modified Aug. 3, 2012).

22. See generally CAROLYN DIMITRI & LYDIA OBERHOLTZER, U.S. DEP'T OF AGRIC., *MARKETING U.S. ORGANIC FOODS: RECENT TRENDS FROM FARMS TO CONSUMERS* (2009), available at [http://www.ers.usda.gov/media/185272/eib58\\_1\\_.pdf](http://www.ers.usda.gov/media/185272/eib58_1_.pdf).

23. *U.S. Organic Industry Overview*, ORGANIC TRADE ASS'N (2011), <http://www.otacom/pics/documents/2011OrganicIndustrySurvey.pdf>.

and is one of the fastest growing markets in agriculture today.<sup>24</sup>

## II. OUT OF ADVERSITY ARISES NEW OPPORTUNITY

From increased productivity in U.S. agriculture emerged the need to ensure sustainability of these efforts and to find new uses for our crops, plant materials, and livestock waste. It started with crop-based renewable fuel and energy.<sup>25</sup> Uses of crop residue, plant material, and livestock waste are now expanding into the production of chemicals, polymers, fabrics, and fibers.<sup>26</sup>

Increased productivity requires more from our land and water resources. Farmers and ranchers understand this fact better than most. As the population most vested in being good stewards of the land and the water, because their livelihood depends on them, farmers and ranchers have now enrolled a record number of acres in a variety of conservation programs.<sup>27</sup> More conservation leads to more fertile soil, cleaner water, more wildlife diversity, and improved outdoor recreational opportunities.<sup>28</sup>

Faith in our abilities, not fear, led to more markets, products, opportunities, jobs, and profits. The last two years have been the most profitable in history for our farmers, ranchers, and producers who have seen record income and increased net worth.<sup>29</sup> At the same time, unemployment rates are dropping at

24. See generally CAROLYN DIMITRI & CATHERINE GREENE, U.S. DEP'T OF AGRIC., RECENT GROWTH PATTERNS IN THE U.S. ORGANIC FOODS MARKET (2002), available at [http://www.ers.usda.gov/media/249063/aib777\\_1\\_.pdf](http://www.ers.usda.gov/media/249063/aib777_1_.pdf).

25. See generally Henry Lee et al., *Biofuels and Sustainable Development* (Ctr. for Int'l Dev. at Harvard Univ., Working Paper No. 174, 2008), available at [http://www.hks.harvard.edu/var/ezp\\_site/storage/fckeditor/file/pdfs/centers-programs/centers/cid/publications/faculty/wp/174.pdf](http://www.hks.harvard.edu/var/ezp_site/storage/fckeditor/file/pdfs/centers-programs/centers/cid/publications/faculty/wp/174.pdf); John Miranowski et al., *Biofuel, the Rural Economy, and Farm Structure*, AGECON SEARCH (2008), available at <http://ageconsearch.umn.edu/handle/48720> (follow "View/Open").

26. See *The BioBusiness Alliance of Minnesota Releases Roadmap for Minnesota's Advanced Biofuels and Biobased Chemicals Industry*, MFRTECH.COM (Mar. 28, 2012, 3:35 PM), <http://www.mfrtech.com/articles/25593.html>.

27. See *USDA Announces Results for Conservation Reserve Program General Sign-Up*, THE GILMER MIRROR ONLINE (May 25, 2012), [http://www.gilmermirror.com/view/full\\_story/18724169/article-USDA-Announces-Results-for-Conservation-Reserve-Program-General-Sign-Up](http://www.gilmermirror.com/view/full_story/18724169/article-USDA-Announces-Results-for-Conservation-Reserve-Program-General-Sign-Up); Jeannette E. Warnert, *Conservation Tillage Achieves Record Acreage, Yields*, 66 CAL. AGRIC. 54, 54 (2012).

28. See generally SOIL & WATER CONSERVATION SOC'Y, ENVIRONMENTAL BENEFITS OF CONSERVATION ON CROPLAND: THE STATUS OF OUR KNOWLEDGE (Max Schnepf & Craig Cox eds., 2006).

29. Charles Abbott, *US Farm Income to Set Record on Skyrocketing Markets*, REUTERS (Nov. 29, 2011, 2:18 PM), <http://www.reuters.com/article/2011/11/29/usa-agriculture-idUSN1E7AS0VH20111129>.

a faster rate in rural America than in suburban or urban America.<sup>30</sup> Rural manufacturing has also experienced a recent revitalization due to increases in farm implement manufacturing.<sup>31</sup>

The revitalization of rural America, based on efficiency and innovation, has been remarkable and helps us appreciate the role that rural America and agriculture can play in the lives of all Americans.

### III. BEING A FOOD SECURE NATION

Faith in the ability of American agriculture and its capacity to innovate produces more than economic dividends for American producers and rural communities. Our production—unmatched in efficiency—ensures that our nation will always be able to meet the food needs of our citizens and, in addition, grows our energy security, which we will examine more fully below.

Rural America and American agriculture produce a rich diversity of agricultural products making America a food-secure nation. For a nation, this means that if all of our borders were to close, as they did on September 11, 2001, and remain closed indefinitely, we would not need to fear running out of food. American agriculture can and does grow and raise all we need to be food self-sufficient, if necessary.

The extraordinary efficiency of American agriculture, which enables America to be food secure, ought to be celebrated and never taken for granted. Eighty-five percent of all the food we consume is produced here in the United States.<sup>32</sup> The other 15% is imported, allowing us to enjoy fresh fruits and vegetables year round. Americans want choice and appreciate diversity, and American agriculture delivers.

Despite this diversity and abundance, the staples of life are produced by an extraordinarily small number of producers. The definition of “farmer” used at the USDA is a fairly broad and expansive definition. Anybody who produces and sells more

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30. Bill Bishop & Roberto Gallardo, *Rural Unemployment Lower Than City Rates*, DAILY YONDER (Dec. 7, 2009), <http://www.dailyonder.com/rural-unemployment-lower-city-rates/2009/12/07/2485>; ECON. RES. SERVICE, U.S. DEP'T. OF AGRIC., *RURAL AMERICA AT A GLANCE: 2011 EDITION* (2011), available at <http://www.ers.usda.gov/media/123318/eib85.pdf>.

31. Jason Henderson, *Rebuilding Rural Manufacturing*, FED. RES. BANK OF KAN. CITY 1, 2 (2012), [http://www.kansascityfed.org/publicat/mse/MSE\\_0212.pdf](http://www.kansascityfed.org/publicat/mse/MSE_0212.pdf).

32. *Import Shares of US Food Consumption*, U.S. DEP'T OF AGRIC. (2009), [http://www.ers.usda.gov/media/563776/import\\_1.xls](http://www.ers.usda.gov/media/563776/import_1.xls).

than a thousand dollars' worth of produce is a farmer under our Census of Agriculture (Ag Census) definition.<sup>33</sup> According to this definition, there are over 3.28 million Americans who farm.<sup>34</sup> Even more amazing is the small number of producers who produce the bulk of what we consume. The 2007 Ag Census (table 40), from the National Agricultural Statistics Service, reports that 125,478 farms accounted for 75% of the market value of agricultural products sold.<sup>35</sup> The Economic Research Service report, "Small Farms in the United States" (EIB 63), using Ag Census data, reports that farms in 2007 with at least \$250,000 in sales (9.5% of the total, or about 209,000 farms), accounted for 86% of the market value of agricultural products sold.<sup>36</sup>

Make no mistake, there are hardly any other people on earth that have the same security as Americans: knowing that if all else fails, if the ports get shut down, if we hunker down and we are engaged in some massive conflagration, we would be able to feed ourselves independently. This has not always been the case. During the first part of the twentieth century, America engaged in subsistence farming<sup>37</sup>—meaning if weather conditions failed to cooperate, then not enough food would be produced to feed all our people.

We were at risk. The focus had to shift to more production. At that point American ingenuity kicked in, and American agriculture accepted the challenge to develop better seeds and more effective production methods.

Since 1960 innovation in agriculture has taken hold, bringing 300% increases in corn and soybean production and 150% increases in wheat production.<sup>38</sup> Because of our faith in

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33. *2007 Census of Agriculture: Farm Numbers*, U.S. DEP'T. OF AGRIC., [www.agcensus.usda.gov/Publications/2007/Online\\_Highlights/Fact\\_Sheets/Farm\\_Numbers/farm\\_numbers.pdf](http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/Farm_Numbers/farm_numbers.pdf) (last visited Mar. 6, 2013).

34. U.S. DEP'T OF AGRIC., *2007 CENSUS OF AGRICULTURE: SUMMARY AND STATE DATA 53* (2009), *available at* [http://www.agcensus.usda.gov/Publications/2007/Full\\_Report/Volume\\_1\\_Chapter\\_1\\_US/usv1.pdf](http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1_Chapter_1_US/usv1.pdf).

35. *Id.*

36. ROBERT A. HOPPE ET AL., U.S. DEP'T OF AGRIC., *SMALL FARMS IN THE UNITED STATES: PERSISTENCE UNDER PRESSURE* (2010), *available at* [http://www.ers.usda.gov/media/147007/eib63\\_1\\_.pdf](http://www.ers.usda.gov/media/147007/eib63_1_.pdf).

37. CAROLYN DIMITRI ET AL., U.S. DEP'T. OF AGRIC., *THE 20TH CENTURY TRANSFORMATION OF U.S. AGRICULTURE AND FARM POLICY 9* (2005), *available at* [http://www.ers.usda.gov/media/259572/eib3\\_1\\_.pdf](http://www.ers.usda.gov/media/259572/eib3_1_.pdf) (explaining that since World War II productivity has increased, which has led to rising surpluses despite a decline in the number of farms, due to application of mechanical and chemical technology).

38. *Production, Supply and Distribution Online Database*, U.S. DEP'T OF AGRIC., <http://www.fas.usda.gov/psdonline/psdQuery.aspx> (last visited Mar. 6,

America's agricultural capacity we are now a nation that produces what we need. This gives us great flexibility to protect ourselves while also helping others.

But production is not enough. To be secure we need to ensure that the food gets to the people. President Harry Truman was so concerned about the nation's security that he even proposed the school lunch program.<sup>39</sup> He wanted to make sure that children had enough calories each day to grow up strong so they would be ready and healthy enough to defend the nation should we be attacked again.

#### IV. INNOVATIVE AMERICAN AGRICULTURE LEADING TO A MORE SECURE WORLD

Are there additional benefits of increased productivity besides having a food secure nation? Yes. American agricultural innovation enables us to confidently share our products and knowledge to improve global agricultural productivity, thereby reducing the risk of global food shortages.<sup>40</sup> We can provide food assistance to those in need and share our production expertise so other nations may be more productive. A country whose people are well fed is likely a country that is at peace with itself. Look at what happens in other parts of the world where food is scarce: discontent and discord abound. Some have made the connection that troubles in Egypt erupted because bread was

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2013) (noting a 319% increase in corn, 398% increase in soybean, and 165% increase in wheat production since 1960).

39. Gordon W. Gunderson, *The National School Lunch Program: Background and Development*, U.S. DEP'T OF AGRIC., <http://www.fns.usda.gov/cnd/Lunch/AboutLunch/NSLP-Program%20History.pdf> (last modified Feb. 21, 2012) ("The legislation was identified as the 'National School Lunch Act,' and Section 2 of the Act defines its purposes: 'It is hereby declared to be the policy of Congress, as a measure of national security, to safeguard the health and well-being of the Nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other food . . . .'").

40. See *How to Feed the World in 2050*, FOOD & AGRIC. ORG. OF THE U.N., [http://www.fao.org/fileadmin/templates/wsfs/docs/expert\\_paper/How\\_to\\_Feed\\_the\\_World\\_in\\_2050.pdf](http://www.fao.org/fileadmin/templates/wsfs/docs/expert_paper/How_to_Feed_the_World_in_2050.pdf) (advocating for the enhancement of investment in sustainable agricultural production capacity and rural development, the promotion of technology change and productivity, and the building up of trade and markets for farmers as way to ensure global food security in the future); Don Hofstrand, *More on Feeding Nine Billion People by 2050*, AGRIC. MARKETING RES. CTR., (Jan. 2012), [http://www.agmrc.org/renewableenergy/renewable\\_energy/more-on-feeding-nine-billion-people-by-2050/](http://www.agmrc.org/renewableenergy/renewable_energy/more-on-feeding-nine-billion-people-by-2050/) (arguing that investment in and extension of agricultural research combined with increased trade are the keys to feeding the world in 2050).

scarce and too expensive; these troubles eventually resulted in the toppling of the government.<sup>41</sup>

Hungry people often turn into angry people. There are 925 million people in the world today who are chronically hungry.<sup>42</sup> We expect to see the world population grow from seven billion to ten billion by 2100.<sup>43</sup> We will have to increase food productivity by 70% to meet the demand of a growing global population.<sup>44</sup>

If we think there is difficulty in the world today over oil supply, imagine the fear and strife that will be experienced in the face of global food and water shortages.<sup>45</sup> American agriculture and innovation can help alleviate these fears and shortages. To do so, we will have to build relationships with developing nations and establish a mutual trust in the science leading to more innovation and production.

We start building that relationship by feeding those in need through programs like the McGovern-Dole school feeding program.<sup>46</sup> This program has improved the lives of millions of chil-

41. See *Egyptians Riot over Bread Crisis*, THE TELEGRAPH (Apr. 8, 2008, 12:01 AM), <http://www.telegraph.co.uk/finance/economics/2787714/Egyptians-riot-over-bread-crisis.html>; *Food Crisis in Egypt Could Lead to Next Revolution: 'Bread Riots'*, VOXXI (Apr. 12, 2012), <http://www.voxxi.com/food-crisis-in-egypt-could-lead-to-next-revolution-bread-riots/>.

42. *925 Million in Chronic Hunger Worldwide*, FOOD & AGRIC. ORG. OF THE U.N. (Sept. 14, 2010), <http://www.fao.org/news/story/en/item/45210/icode/>; *Hunger*, WORLD FOOD PROGRAMME, <http://www.wfp.org/hunger/> (last visited Mar. 6, 2013).

43. *Growing Pains*, ECONOMIST, May 5, 2011, [http://www.economist.com/blogs/dailychart/2011/05/world\\_population\\_projections](http://www.economist.com/blogs/dailychart/2011/05/world_population_projections); Justin Gillis & Celia W. Dugger, *U.N. Sees Rise for the World to 10.1 Billion*, N.Y. TIMES, May 4, 2011, at A1.

44. *Food Production 'Must Rise 70%'*, BBC NEWS (Oct. 12, 2009, 4:20 PM), <http://news.bbc.co.uk/2/hi/8303434.stm>.

45. The following excerpt illustrates the point:

American farmer-soldiers are making a small difference in Afghanistan, part of the National Guard's agricultural development efforts in the war-torn country since 2007, Air Force Capt. Peter Shinn told those attending an Agriculture Media Summit luncheon here on Tuesday. "Agriculture is absolutely vital to stabilizing the Afghanistan economy and security," said Shinn, noting that 75 to 80 percent of the economy there is farm-driven. "When people don't have enough to eat, the result is conflict." Shinn, public affairs officer with the 734th Agribusiness Development Team of the Iowa Air Force National Guard, spent almost a year in Afghanistan in 2010 and 2011. He is a former Nebraska-based Brownfield Ag News radio broadcaster.

Kim de Bourbon, *National Guard Farmer-Soldiers Helping Ag Development Efforts in Afghanistan*, HAGSTROM REP. (Aug. 8, 2012), available at [http://www.hagstromreport.com/2012news\\_files/2012\\_0808\\_natguard.html](http://www.hagstromreport.com/2012news_files/2012_0808_natguard.html).

46. *McGovern-Dole Food for Education and Child Nutrition Program*, U.S. DEPT OF AGRIC., <http://www.fas.usda.gov/excredits/FoodAid/FFE/FFE.asp>

dren across the world by providing nutritious meals at schools thereby encouraging more children to attend school and receive an education.<sup>47</sup> The results are healthier and better educated peoples who have more opportunities in the world and, when you establish such programs and connect them to the American flag, it becomes less likely that youngsters grow up disliking our country. As developing nations become more productive, their middle class grows. A growing middle class creates greater demand for value-added agricultural products that America can produce in great abundance.

Another program is the “Feed the Future Initiative” at the USDA, USAID, and the State Department which provides the framework for aiding targeted developing countries in sub-Saharan Africa, Southeast Asia, and Central America.<sup>48</sup> For its

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(last visited Mar. 6, 2013) (“The McGovern-Dole International Food for Education and Child Nutrition Program is a global school feeding program that promotes education, child development, and food security for some of the world’s poorest children. Named in honor of Ambassador and Senator George McGovern and Senator Robert Dole, the McGovern-Dole Program provides donations of agricultural commodities and financial and technical assistance for school feeding and maternal and child nutrition projects in low-income countries. . . . The school feeding and nutrition projects within recipient countries are conducted by nonprofit charitable organizations, cooperatives, the United Nations World Food Program, and other international organizations. USDA invites proposals for projects, which are then carefully reviewed. Proposals are selected based on several criteria, including the following: (1) the implementing organization’s experience in school feeding; (2) additional, non-McGovern-Dole program resources that will be available to implement multi-year, sustainable projects based on assessed needs; (3) targeting of low-income areas with low school attendance or enrollment rates, especially for girls; (4) coordination of supplementary feeding with nutrition programs; and (5) involvement of local institutions and communities. . . . In addition, country eligibility for McGovern-Dole funding is contingent upon the following criteria: (1) country-wide per capita income must be at lower, or lower-middle income standards (using World Bank statistics); (2) the country must have greater than 20 percent prevalence of stunting (WHO data); (3) adult literacy rates must reside below 75 percent; (4) the country must be a net food importer; (5) the government must have preexisting commitments to education; and (6) the country may not have, or have limited civil conflict that could impede implementation of the program.”).

47. See *McGovern-Dole Food for Education Success Stories*, U.S. DEP’T OF AGRIC., [http://www.fas.usda.gov/excredits/FFE/FFE\\_success.asp](http://www.fas.usda.gov/excredits/FFE/FFE_success.asp) (last visited Mar. 6, 2013).

48. See *About, FEED THE FUTURE*, <http://www.feedthefuture.gov/about> (last visited Mar. 6, 2013) (“Feed the Future is the United States Government’s global hunger and food security initiative. It supports country-driven approaches to address the root causes of hunger and poverty and forge long-term solutions to chronic food insecurity and undernutrition. . . . Feed the Future is the United States’ contribution to a collaborative global effort that supports country-owned processes and plans for improving food security and

part, USDA focuses on research aimed at increased productivity, market development, and in-country capacity by extending USDA's core competence in these areas to developing countries. As knowledge is shared, a mutual trust in the science behind the knowledge will develop. This gives the nations embracing this science the best chance of participating in meeting the global food challenge before us.

V. FAITH IN INNOVATION IS MAKING RURAL AMERICA AND AGRICULTURE ONE OF THE KEYS TO A MORE SECURE ENERGY FUTURE (AND OTHER INNOVATIONS)<sup>49</sup>

America's food-secure status enhances overall national security. As noted above, food security can further other nations'

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promoting transparency. . . . Feed the Future represents a \$3.5 billion pledge to work with partner countries, development partners, and other stakeholders to tackle global food security challenges. . . . These efforts, in turn, ultimately advance international security and benefit the American people. . . . Enormous progress has been made in reducing global poverty, but there is much more to do. Almost one billion people — more than one seventh of the world — suffer from chronic hunger, while more than 3.5 million children die each year from undernutrition. Hunger robs the poor of healthy and productive lives and stunts the mental and physical development of the next generation. The world's population is projected to increase to more than nine billion by 2050, requiring up to a 70 percent increase in agricultural production. Meeting this need and reducing chronic hunger are essential to the sustainable development of individuals, communities, and nations. Investments in economic growth, poverty reduction, and improved health in developing countries are also critical to U.S. national prosperity, stability, and security.”).

49. U.S. agriculture is turning waste into value. For example, bio-digesters are turning waste streams into streaming electrons and crop waste is being turned into valuable chemicals, synthetics and plastics. See, e.g., Len Richardson, *UC Project Turns Leftovers into Clean Fuel, Electricity*, CAL. FARMER 20, 28 (2007), available at <http://magissues.farmprogress.com/CLF/CF03Mar07/clf020.pdf>; Don Hofstrand, *Crop Residue—A Valuable Resource*, AGRIC. MARKETING RES. CTR. (Oct. 2009), [http://www.agmrc.org/renewable\\_energy/ethanol/crop-residue-a-valuable-resource/](http://www.agmrc.org/renewable_energy/ethanol/crop-residue-a-valuable-resource/). More than 1.4 million U.S. workers are employed in the bioscience sector and the emergence of this vibrant bio-economy holds the promise of even more. BATTELLE/BIO, STATE BIOSCIENCE INDUSTRY DEVELOPMENT 2012 19 (2012), available at [http://www.bio.org/sites/default/files/v3battelle-bio\\_2012\\_industry\\_development.pdf](http://www.bio.org/sites/default/files/v3battelle-bio_2012_industry_development.pdf).

Agriculture and agricultural waste are increasing their on-farm income. They are making money out of what was a drain on their systems and they are reducing our reliance on foreign oil by creating opportunity in the American mid-west, not the Arabian Middle East.

When someone produces something, it has to be taken to a location where it is stored and then ultimately transported to where it is processed, packaged, marketed, retailed, sold and consumed. Every one of these steps involves employment. And that's just traditional agriculture.

pursuit of peace. At the same time, American agriculture and innovation continue to help our country achieve a more secure energy future.<sup>50</sup>

America devotes one billion acres to crop production each year.<sup>51</sup> For years the focus of that production has been to meet our food and fiber needs. As the fear of oil shortages from the threats of embargoes and disruptions of supply by unfriendly oil-producing countries grew, America needed a strategy to protect our economy and our national interests. We began to place our faith in rural America and American agriculture to produce and implement the strategy—we could grow the feedstock for a new fuel and energy supply. Our faith was not misplaced.

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There are new innovations and new opportunities in the bio-based economy. Today, there are 3,100 companies in America that are producing something like a chemical, a polymer, a fabric, a fiber from plant-based, crop residue-based, or livestock waste-based feedstocks. American agriculture is contributing to a rebirth of the chemical industry in this country. It is helping us move away from petroleum-based plastics into more renewable resources that can be developed here in the United States. Just imagine the enormous opportunity to redefine the economy of this country based on the capacity of American agriculture to produce.

At Ohio State University they are making rubber from dandelions. *Bridgestone America and OSU Researching Dandelions as Alternative Materials in Rubber Production*, TECH COLUMBUS (July 5, 2012, 2:37 PM), <http://www.techcolumbus.org/bridgestone-america-and-osu-researching-dandelions-alternative-materials-rubber-production>. They are also making asphalt from hog manure. Jane Wells, *Asphalt from Pig Manure?*, CNBC (July 25, 2012, 8:48 AM), [http://www.cnbc.com/id/48303540/Asphalt\\_From\\_Pig\\_Manure](http://www.cnbc.com/id/48303540/Asphalt_From_Pig_Manure). Coca-Cola is working with a couple of innovation companies to produce a 100 percent plant-based bottle. Leon Stafford, *Coca-Cola Looks to Make 100 Percent 'Plant Bottle' in New Partnerships*, ATLANTA JOURNAL-CONST. (Dec. 15, 2011, 7:16 PM), <http://www.ajc.com/news/business/coca-cola-looks-to-make-100-percent-plant-bottle-i/nQPYN/>. Since Coke sells billions of bottles a year, they have the ability to change the market place for biobased bottles. Just think about this: the capacity to use what has had little value or limited value now has unlimited potential. America used to be able to export chemicals, but now, because we are such a user of chemicals, we have to import them, creating wealth and jobs abroad. We can do it now here in America.

50. See Cole Gustafson, *Biofuel Economics: Future of Renewable Energy is Secure*, N.D. STATE UNIV. EXTENSION SERV., <http://www.ag.ndsu.edu/news/columns/biofuels-economics/biofuel-economics-future-of-renewable-energy-is-secure/> (last visited Mar. 6, 2013).

51. CYNTHIA NICKERSON ET AL., U.S. DEP'T. OF AGRIC., MAJOR USES OF LAND IN THE UNITED STATES, 2007 1 (2011), available at [http://www.ers.usda.gov/media/188404/eib89\\_2\\_.pdf](http://www.ers.usda.gov/media/188404/eib89_2_.pdf) (stating that 408 million acres of land are used in crop production and 614 million acres are used as pasture or range land).

Today, algae,<sup>52</sup> citrus waste,<sup>53</sup> woody biomass,<sup>54</sup> grasses,<sup>55</sup> crop residue,<sup>56</sup> corn, and soybeans<sup>57</sup> are all being used to produce first and second generation bio-fuels and/or as energy sources for producing electricity. Almost all of these are grown or harvested from rural America as a result of the work of American farmers and producers.

Over thirteen billion gallons of ethanol alone are now being produced from renewable sources helping to reduce our reliance on foreign oil supplies.<sup>58</sup> In the last three years America has reduced oil imports from 57% of our needs to just 45%.<sup>59</sup> At the same time, over 400,000 people have jobs in our country supported by the renewable fuel and energy industry.<sup>60</sup> America is just getting started. The goal is to produce thirty-six billion gallons by 2022, which will represent nearly 16% of our future fuel needs (roughly equivalent to what we currently import from the Middle East) while helping to support nearly one million jobs here at home.<sup>61</sup>

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52. See *Algae: Biofuel of the Future?*, SCIENCE DAILY (Aug. 19, 2008), <http://www.sciencedaily.com/releases/2008/08/080818184434.htm>.

53. See Alfredo Flores, *Ethanol Feedstock from Citrus Peel Waste*, 54 AGRIC. RES. 19, 19 (2006).

54. See FOREST SERV., U.S. DEP'T OF AGRIC., *WOODY BIOMASS UTILIZATION STRATEGY 2-3* (Marcia Patton-Mallory ed., 2008), available at [http://www.fs.fed.us/woodybiomass/strategy/documents/FS\\_WoodyBiomassStrategy.pdf](http://www.fs.fed.us/woodybiomass/strategy/documents/FS_WoodyBiomassStrategy.pdf).

55. See Alex Morales, *Mutant Maize Genes May Help Harness Switch Grass for Biofuels*, BLOOMBERG (Oct. 10, 2011, 10:40 PM), <http://www.bloomberg.com/news/2011-10-10/mutant-genes-help-harness-switch-grass-for-biofuel-pnas-says.html>; Susan S. Lang, *Grass Pellets as an Economical, Environmentally Friendly Biofuel*, CORNELL CHRON., Apr. 7, 2005, [http://www.news.cornell.edu/Chronicle/05/4.7.05/grass\\_biofuel.html](http://www.news.cornell.edu/Chronicle/05/4.7.05/grass_biofuel.html).

56. Don Comis & Ann Perry, *In the Midwestern United States: Growing Biofuel Crops Sustainably*, 57 AGRIC. RES. 7, 7 (2009), available at <http://www.ars.usda.gov/is/AR/archive/sep09/crops0909.pdf>.

57. Alexei Barrionuevo, *It's Corn vs. Soybeans in a Biofuels Debate*, N.Y. TIMES, July 12, 2006, at C4.

58. Tom Waterman, *2011 U.S. Ethanol Production Exceeds 13.9 Billion Gallons*, ETHANOL MONITOR (Mar. 1, 2012, 7:12 AM), <http://www.ethanolmonitor.com/2011-u-s-ethanol-production-exceeds-13-9-billion-gallons/>.

59. See Neela Banerjee, *U.S. Report: Oil Imports Down, Domestic Production Highest Since 2003*, L.A. TIMES, Mar. 12, 2012, <http://www.latimes.com/news/politics/la-pn-report-us-oil-imports-down-domestic-production-highest-since-2003-20120311,0,1926377.story>.

60. See GROWTH ENERGY, *ETHANOL POLICY BRIEF 1, 2* (2010), available at [http://www.growthenergy.org/images/reports/brief\\_ethanolpolicy\\_20101116.pdf](http://www.growthenergy.org/images/reports/brief_ethanolpolicy_20101116.pdf).

61. *Id.*

And we are heading to energy security long before anticipated.<sup>62</sup>

The military leaders of our country understand the risk we run in being dependent upon foreign sources for the fuel we need to defend our country. They have great faith in our ability to meet more of our needs at home. For that reason the Navy, Department of Energy, and the USDA have entered into a unique partnership to create a new industry for America to produce an advanced bio-fuel from non-food feedstock for use in the Navy's planes and ships. Once developed, this fuel supply will give American commercial airlines a competitive advantage over its international competitors because our airlines will no longer fear the disruption that can occur when fuel supplies are suddenly disrupted or when fuel prices rise without warning.

American consumers also benefit from a healthy bio-fuel industry. A recent Iowa State University study indicates that in some parts of the country the presence of a bio-fuel alternative can save consumers as much as \$0.58 to a \$1.37 per gallon of gas.<sup>63</sup>

The benefit of placing faith in American agriculture to reduce our dependence on foreign oil even has benefits beyond our borders. A thriving bio-fuel industry in America will force countries that are overly reliant on the sale of oil to America to begin planning for a more diverse economy, opening up more job opportunities for their own unemployed. More employment, more opportunity, more food, and more energy, here and abroad makes all of us a bit more secure.

## VI. CONCLUSION: OUT OF ADVERSITY ARISES NEW OPPORTUNITY REDUX—A NEW FORMULA FOR A NEW FUTURE

Common knowledge leads us to believe that great innovations are spurred by great adversity—war, famine, or disease. We have demonstrated that American agriculture has met challenges in the past and emerged stronger, more efficient, and more effective as a player on the world stage. There is nothing to stop us from doing this again in light of the current drought, the current U.S. economic conditions, or even the global economic con-

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62. See generally INTL ENERGY AGENCY, ENERGY TECHNOLOGY PERSPECTIVES 2012: PATHWAYS TO A CLEAN ENERGY SYSTEM (2012), available at <http://www.iea.org/Textbase/npsum/ETP2012SUM.pdf>.

63. Xiaodong Du & Dermot J. Hayes, *The Impact of Ethanol Production on US and Regional Gasoline Markets: An Update to May 2009 1–4* (Ctr. for Agric. & Rural Dev. Iowa State Univ., Working Paper No. 11-WP 523, 2011), available at <http://www.card.iastate.edu/publications/dbs/pdf/files/11wp523.pdf>.

ditions. We, as a nation, have built ourselves up over 200 years by continual reinvention—from subsistence farmers to world commodity traders to a world pantry. Technological advances have led us out of wars, and today innovation in agriculture, including turning waste into opportunity, is allowing us to feed ourselves, the world, and provide ever increasing energy choices.

Barbara Grizzuti Harrison—a woman who knew about faith and fear—is credited with saying, “There are no original ideas. There are only original people.” Americans are an original people when it comes to innovation, none more so than those Americans who farm the land. America’s farmers and ranchers confront the possibility of failure every year, but have succeeded by having faith in the land and in themselves. Today we are a stronger nation for having faith in our abilities over our fears of failure, and it prepares us well for our future.

