

State of Utah

AGRICULTURE SUSTAINABILITY TASK FORCE

Planning for Agriculture



January 2012



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Preface



Agriculture Sustainability In Utah

Dear Utah Citizen:

As co-chairs of the Agriculture Sustainability Task Force, we are delighted to share this report with you. In this report, we have tried to capture the work of the Task Force and provide you with critical information about Utah agriculture.

What is sustainability?

There are two ways of looking at sustainability: *The capability of being sustained*, and *the capability of sustaining*. The taskforce looked at both ideas. We wanted to know how agriculture sustains our communities, and how our communities sustain our agricultural lands, producers, and heritage. To understand sustainability, consider the following key questions:

What is Utah agriculture?

Every farm or ranch is different. Usually, we think of ranchers on horseback surrounded by their animals, or a farmer in a large field with a tractor. These types of farms still account for the majority of agricultural products in Utah, but urban farms are also adding to our local food supply. These are small acreage operations growing vegetables, fruits, eggs, honey, and sometimes meat, for the consumer market. What distinguishes them is that they are in cities, or suburbs, rather than far away in rural areas. The other difference is that they often use different marketing strategies such as farmers markets or Community Supported Agriculture (CSA) subscriptions to sell their products.

Why conserve our farms?

Farms of all sizes provide a number of benefits that are critical to our quality of life. They produce food, fiber, nursery stock, and flowers. They clothe us, beautify our surroundings, and supply us with the energy we need everyday. Utah farms and ranches also contribute significantly to the state's economy. Everything grown here can be imported from outside of Utah, but the cost of transporting them and the concerns with the safety, nutrition, and availability of imported products make having local capacity to produce food very important and beneficial to us. It is important not to become dependent on foreign sources for such a basic critical need as food.

Why is this important to me?

Population growth, land prices, and fluctuating operating costs and market prices for agricultural products make it hard for farmers to make a living. As farm businesses are threatened, our local food security is at risk and we are all subject to additional inflationary costs for our food.



Commissioner of Agriculture and Food, Leonard Blackham (left), co-chaired the Task Force with Lt. Governor, Greg Bell (right).

Preface...Continued

What can we do?

There are many things that we can do. Mostly, however, it boils down to this: we have to make it easier for farmers and ranchers to make a living on the land available to them.

Strategies to do this may include:

- providing new markets for agricultural products
- finding ways to keep more of the billions of dollars we spend each year on food within the State of Utah
- using new media, the internet and other innovative marketing strategies to inform the public of our efforts
- changing tax policies and zoning regulations to favor agricultural production
- creating other options to help promote the economic health of our farms and ranches

Current tools, such as conservation easements or transfer of development rights to ensure that our agricultural lands are permanently protected, can be used when necessary to protect the health of these vital assets. Another important tool is the USU Extension Service and its ability to provide critical information to our farmers and ranchers.

What are the benefits of protecting farms and ranches?

In general, farmers and ranchers are good stewards of the land. Their wise management protects critical watersheds, provides habitat for important wildlife, maintains clean water and air, and provides environmental benefits too. Overall, this kind of management has the power to promote a better quality of life.

Recommendations:

We have developed and adapted recommendations for the State, local governments, producers, and consumers.

We trust these recommendations will start deliberations on important issues and will result in concrete solutions to protect farms, ranches, farm families, and most importantly, the communities that are served by the benefits of Utah Agriculture.

Sincerely,



Greg Bell, Chair
Lt. Governor



Leonard Blackham, Co-chair
Commissioner of Agriculture



Utah Agriculture Sustainability Task
Force members at work, 2011

Executive Summary

As agriculture in Utah continues to face increased pressure from urban development, changing demographics, economic pressures, and a myriad of other issues, it is becoming increasingly important that policy makers and citizens understand the critical role that agriculture plays in promoting Utah's security, economy, society, culture, and well-being.

To better understand and address these concerns, Lieutenant Governor Greg Bell and Commissioner of Agriculture Leonard Blackham convened the Utah Agriculture Sustainability Task Force. The Task Force was comprised of state legislators, local government officials, conservation districts, agricultural producers, and other interested parties. They came together to gather and analyze data and information, and to make recommendations to promote the sustainability of all types of agriculture in Utah. During the discussion of key agricultural sectors, eight major issues emerged:

Food Security - Local farming gives us the ability to feed people in their communities independent of outside influences and keeps dollars spent on agricultural products in the local economy. Once prime or important agricultural lands are converted to urban development, the ability to produce food is lost and our ability to be self-sufficient is decreased.

Invasive Species - More effective coordination is needed to inventory and control weeds on public and private lands. Increased public awareness is critical to minimize the spread of invasive species.

Grazing Management - Livestock grazing is the dominant sector in Utah agriculture. While the number of permitted livestock on public lands has been decreasing, rangeland can support additional livestock grazing that is beneficial to wildlife, healthy lands, and quality recreational opportunities, if it is properly managed. Landscape-scale grazing management can be a tool to effectively manage natural resources for wildlife and livestock.

Immigration - Utah farms and ranches require an ample, sustainable, and legal workforce.

Urban Agriculture - Urban agriculture is a growing segment in which "every acre counts". Creating agriculture-friendly zoning ordinances will help expand food-producing opportunities throughout our cities and counties.

Agriculture Promotion and Profitability - To be sustainable, agriculture must be *profitable*. This will require increased local marketing opportunities, processing capacity, and distribution networks.

Next Generation Farms - As the average age of farm operators in Utah continues to increase, it will be important to provide Utah farmers and ranchers with reasonable options for generational farm transfer.

Irrigation Infrastructure - The availability of water is critical to agriculture. Improving water distribution systems to deliver water to farm lands in a cost-effective manner will be important for both sustainable agriculture and projected population growth.

In order to address these issues, the Task Force developed a list of proposed actions that state, local and federal governments, and the private sector can implement. All proposed action items were unanimously supported by all members of the task force, with the exception of conservation easements. A few members of the task force had concerns with the structure and appropriateness of conservation easements.

Action Summary

The 2011 Agriculture Sustainability Task Force proposes the following:

Policy Statement:

Prime, important and unique agricultural lands and soils are vital to sustain human life. The protection of prime agricultural lands should be given the same consideration as other lands by federal agencies, the State of Utah, and its political subdivisions. It is important these lands be conserved for our food security needs.

Proposed Actions:

State

- Develop legislative policy that provides protection for important agricultural lands and soils equal to wetlands in order to sustain food security.
- Fund conservation easement legislation that gives priority to important productive agricultural lands with prime soils or important farmlands. Dedicate greenbelt rollback monies to conservation easements or other productive agricultural uses within the counties where rollback funds are generated. Enable local conservation districts to make recommendations to county commissions related to the use of annual rollback funds.
- Provide new monies to the LeRay McAllister Fund to match funds for conservation easements on productive agricultural lands with prime state or locally-important soils.
- Create a separate greenbelt designation for smaller-acreage productive operations.
- Amend Utah law to fund mitigation of agriculture lands lost to eminent domain.
- Amend Utah law to encourage energy producers to use directional drilling and other techniques to minimize the surface impacts on agricultural lands caused by energy development.
- Provide a \$1,000,000 increase in money from the State of Utah General Fund for invasive species mitigation, especially weed control.
- Consider other sources of funding for weed control tied to the spread of weed seeds including: funds earned from unclaimed property, trailer licenses, noxious weed impact fees from recreational ATVs, gravel pit fee assessments, a portion of the sportsmen fees gathered by the Utah Department of Natural Resources, and other appropriate sources.
- Provide \$1,000,000 of on-going state funding to increase landscape-scale coordinated resource management planning. Where feasible, this money will facilitate the development of grazing management plans, watering facilities, fencing improvements, weed control, and other grazing improvement projects.
- Augment existing funding or develop alternative funding sources to improve and update irrigation system technologies.
- Enhance the Utah Division of Wildlife Resources Big Game Depredation program to mitigate crop and other damages caused by big game to farm and ranch land.

Utah Department of Agriculture and Food

- Increase the capacity of the Utah Department of Agriculture and Food to directly participate in the planning of state and local infrastructure needs when agricultural lands are an issue.
- Work with the Governor's Office of Economic Development to improve local processing capacity.
- Develop incubator kitchens in each county to provide small agricultural companies places to test new products.

Action Summary ...Continued

Local

- Encourage local governments to recognize the importance of agricultural land uses in their general plans, policies and ordinances.
- Encourage local governments to develop specialized local food security plans that work toward these goals.
- Partner with USU Extension, conservation districts, county and city officials, and other interested parties to provide technical assistance for conservation.

Federal

- Encourage the federal government to eliminate subsidies for agriculture-related products diverted from the food supply for energy production.
- Urge the federal government to allow greater state agricultural environmental stewardship oversight using the traditional educational and voluntary programs of the USDA, conservation districts, and the Utah Department of Agriculture and Food as models.
- Create federal block grants to fight invasive species on federal and state lands.
- Pass a resolution calling on Congress to create a new national agriculture guest worker program.
- Support federal legislation to provide funding for improved agriculture irrigation infrastructure.

Call To Action

Under the leadership of UDAF, engage partners, educational institutions, support groups, and others to:

- Update the inventory of invasive species in Utah, more clearly define the role of county weed boards in statute, and identify and prioritize weed control measures.
- Establish outreach and education campaigns to inform the public about how to minimize the spread of invasive species.
- Improve agricultural product distribution capacity by supporting the existing *Utah's Own* program to provide:
 - ◇ Incentives and/or legislation to encourage local stores, restaurants, school lunch programs, state agencies, and other public sector services to buy Utah products first, (when available)
 - ◇ A fund to facilitate central distribution points for the purchase of local Utah agricultural products
 - ◇ Promotion of innovative agricultural practices and products in our partnerships with food buying groups, restaurant groups and emerging businesses
- Increase the funding and effectiveness of predator control, and allot reasonable and sufficient compensation to agricultural producers for wildlife impacts that may disrupt agricultural production.
- Support Utah House Bill 116: an ample, sustainable and legal workforce is critical for our farms and ranches.
- Oppose using E-verification to verify worker status until federal guest worker laws are in place.
- Work with Utah State University and support groups to develop and implement planning and farm transfer programs that will complement retirement and insurance programs for farmers and ranchers. Support efforts to match farmers without identified successors, with young farmers seeking opportunities to purchase or lease farms or ranches. Encourage the financial community to finance farm ownership transfer.
- Work with conservation districts in a statewide effort to map Utah irrigation systems, and educate the general public about the irrigation needs of agriculture and the benefits of well-maintained irrigation delivery systems.

Utah Agricultural History

Urbanization in Utah

For hundreds of years, native populations hunted game, gathered nature's bounty, and farmed along rivers, streams, marshes, wetlands, and lakes.

In the mid 1800's, pioneers began to arrive in Utah. One of the first things these settlers did was dig ditches to provide water to their land. They grew crops and raised livestock.

By 1900, 60 percent of Utah's population lived in rural areas. As of 2010, only 10 percent of the population lived in rural areas. Overall, Utah is one of the more urbanized states in America.

Unfortunately, urban growth has occurred on some of our most productive farm land. This is a common trend across America. During the 1990's, rural land lost to development in the U.S. totaled about 2.2 million acres per year.

In Utah, much of the agricultural lands lost to development were high quality crop lands. If current trends continue, the loss of prime and important farm land will accelerate

with population increases and will demand emergency attention.

According to a 2008 Governor's Office of Planning and Budget report, if current development trends continue, by the year 2030 nearly 200,000 additional acres of farmland will be converted to urban uses. Much of this development will occur on the most productive farmlands in counties along the Wasatch Front.

Change in Farms & Ranches

The number and size of farms and ranches has dramatically changed in Utah. From 1900 to 1990, the number of Utah farms decreased. Beginning in 1990 the number of farms began to increase again (figure 1). The 2011 Utah Agricultural Statistics report recorded 16,600 farms.

Although the number of farms have increased through the 1990s (figure 2), since 1997 the size of those farms has decreased. Twenty years ago, the average size of a Utah farm was approximately 200 hundred acres larger than it is today.

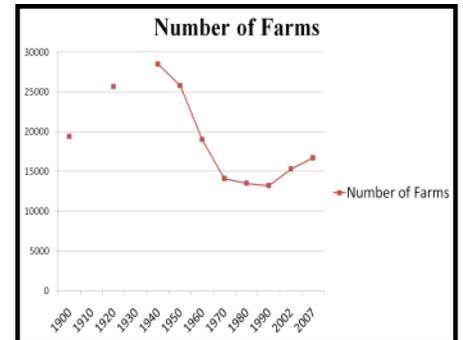


Figure 1—Number of Utah Farms

The average age of farmers continues to increase nationally and in Utah. Current farmers are aging while still working to maintain their lands. The average age of a Utah farmer is 57. Farming is losing its successors as many children are choosing other occupations. It is more difficult now to transfer the farm to the next generation. Because of high land

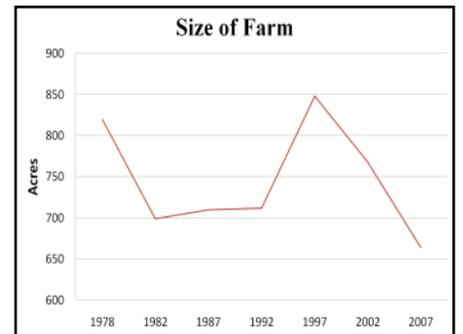


Figure 2—Size of Utah Farms



Utah Agricultural History ...Continued

values, regulation, and inheritance taxes, it has become harder for new farmers to enter the field and make a profit. Current farmers are land rich and cash poor, and because of this, they often choose to sell their land at the time of retirement.



Economics

The state of Utah ranks 37th in the nation in agricultural receipts, with over \$1.5 billion in cash receipts from farms and ranches:

- cattle (\$319 million)
- dairy products (\$301 million)

- hay (\$261 million)
- hogs (\$168 million)
- poultry/eggs (\$140 million)
- sheep (\$18 million)

Utah also ranks 25th in the United States in the amount of private land in agricultural use: a total of about 11,100,000 acres. Since Utah is primarily a 'public lands state', much of our land is used to support livestock grazing. Many private ranches in Utah also graze livestock on public grazing allotments. This adds an additional 45 million acres to the land in agricultural use.

Utah farming and ranching has a great impact on the state's economy. Agricultural sales account for about \$1.5 billion annually. Food growers, processors, and other agriculture related businesses employ more than 66,000 people and contribute approximately 14 percent to the State's economy. Grocers are not included in these figures.

Equine Industry

Horses were used for farming and ranching until the industrial revolution, when mechanical

equipment replaced horses for cultivating and harvesting crops. However, horses are still an important part of ranch management. Horses are used on the ranch to herd livestock from pasture to pasture. Sometimes horses are still used in old-fashioned cattle drives over longer distances.

In addition, many people enjoy horses for leisure riding, racing, rodeos, cutting competitions, and other similar uses.

While official statistics are not kept, the economic impact of the horse industry and the connection it has to agriculture is far reaching. Veterinary services, boarding, feed, equipment, and transportation of horses are all part of the equine industry.

“Utah farming and ranching has a great impact on the state's economy. Agricultural sales account for about \$1.5 billion cash receipts...”

Utah Agricultural Statistics



Section 1: Grazing & Public Land

History of Grazing

Livestock grazing in Utah began with the arrival of the pioneers in 1847. Livestock production has since increased over the years to parallel territory and population growth.

By 1890, the range throughout the west was fully stocked. Heavy grazing on these lands in the early part of the twentieth-century left the rangelands depleted and watersheds damaged. Additional repercussions included the erosion of once fertile soils and an increase in devastating natural disasters, such as floods, that occurred largely because of bare ground created by poorly managed livestock herds.

It was during this time that the federal government established forest reserves in the form of the National Forest Service in an effort to try to curtail overgrazing and harmful societal side-effects. This period marked the beginning of the scientific-range-management style that we see on our lands today (Banner et al., 2009).

Sheep were Dominant

Sheep production was the dominant livestock sector in Utah at the start of the 1900s, reaching a peak of nearly three million sheep and lambs by

1930 (Banner et al., 2009).

In 1929, at the onset of the Great Depression, wool was selling at the highest price ever. This trend, however, like everything else in the economy, was badly hurt by the economic downturn and was sent tumbling downward in 1929 (Murphy, 1996).

Since that time, the sheep industry



has declined by more than 89 percent (Banner et al., 2009). In addition to declining wool prices, Congress passed the Taylor Grazing Act in 1934 to restore damaged watersheds and limit grazing. These new measures had significant effects on the number of sheep in Utah, reducing them by almost one million following the passage of this act. (USU Extension, 2011).

Cattle now Rule

This period of decline in the sheep industry was followed by growth in the beef industry, as producers found themselves switching from sheep to cattle in order to produce

the same profits (Godfrey, 2008). The number of beef cows in Utah has nearly doubled since 1920 (Banner et al., 2009) to become what is now the dominant sector in Utah agriculture (Godfrey, 2008).

Grazing is changing

In Utah, there are nearly 45 million acres of grazing land; 73 percent federally owned, 9 percent state owned, and 18 percent privately owned (GOPB, 2011).

The largest portion of this grazing, done on federal lands, is currently decreasing. Federal grazing permits are allotted in Animal Unit Months, or (AUMs). An AUM is the amount of forage required to feed an animal unit the equivalent of a mature, 1,000 pound cow for one month. On BLM lands, AUM's have declined from 2,749,000 in 1940 to less than 1,000,000 AUMs in 2009, a 63 percent reduction (Banner et al., 2009).

Forest Service lands have experienced a similar decline, decreasing from 2.7 million AUMs in the 1940s, to 600,000 in 2008. While the percentage of forage harvested by livestock on federal lands is decreasing, the total number of AUMs in the state has remained relatively stable over the past 60 years (Godfrey, 2008). This seems to suggest that an increasing percentage of feed may be coming from privately-owned feed sources.

Utah BLM currently manages

Section 1: Grazing & Public Land...Continued

approximately 1,400 grazing allotments that cover a 22 million acre area of BLM land in the State. Many of Utah's BLM grazing allotments are 'common' allotments where more than one permittee is authorized to use the allotment. Grazing on these allotments is authorized through the issuance of 1,462 grazing permits that provided for just over 675,000 AUMs in 2008.

Utah's rangeland management program remains focused on maintaining and improving range conditions throughout the state by assessing Utah's Standards for Rangeland Health, monitoring range conditions, and making necessary adjustments to livestock management on public and private land.

Utah citizens, including ranchers, have a great appreciation for vibrant, healthy rangelands and wildlife. However, the age old questions of who should bear the costs, and who receives the benefits from publicly owned wildlife, often puts a disproportionate burden on the agricultural community. This issue is not isolated to Utah. In fact, it is amplified in the western states where there is a high percentage of public land. Fortunately, among the western states, Utah has been the most proactive in efforts to resolve this dilemma thus far.

Frequently, when resources are held in the public trust, there is an inherent lack of accountability and incentives to manage those resources at the highest level. The 'Perverse Triangle of Incentives' (figure 3) graphically demonstrates the problem. Wildlife belong to the **public**, who has limited

opportunity to manage for those values. **The Utah Division of Wildlife Resources (DWR)** has the responsibility to manage the wildlife, but DWR doesn't own the wildlife or the habitat on which they are so dependent. **Landowners** own the habitat (in the case of private land) and as permittees, are the key players in grazing management on public land. However, landowners have little opportunity or incentive to manage for wildlife values.

The Legislature recognized this issue and created the Cooperative Wildlife Management Unit (CWMU) program to provide incentives for large private land owners to manage for wildlife

Perverse Triangle of Incentives



Figure 3—Perverse triangle of incentives

values. The program has resulted in vastly increased hunting opportunities and has mostly resolved wildlife/rancher conflicts on large private land holdings. However, restitution of damages to crop land is still inadequate. The program, guided by DWR, puts management in the hands of those most capable to achieve results and allows these large landowners to recover the cost of production for wildlife. Finding similar programs to provide solutions for smaller

operations has been elusive.

The health of Utah's public and private rangeland resources will depend on our ability to provide incentives to ranchers, who have the greatest capability/opportunity to manage the land sustainably. If Utah is to improve the health of its public and private rangelands/watersheds, the State will need to provide guidance and incentives to achieve a high level of grazing management on a large scale. The scientifically based principles to accomplish improved management are well known, but the technical guidance, social recognition, political will, and financial resources to bridge this gap are in short supply. Land owners and permittees are the 'boots on the ground' needed to achieve ecologic sustainability and create wealth from the land to be sustainable.

Well managed livestock grazing, though poorly understood by the average citizen, is the most effective way to manage vegetation on a large scale to benefit watershed health and preserve wildlife habitat. Improving grazing management on Utah's public and private rangelands should be viewed as 'high leverage' and a long-term priority. A 1998 Government Accounting Office report titled, *Forest Service Barriers to Generating Revenue or Reducing Costs*, portrays the importance of 'economic sustainability' on US Forest Service Lands and demonstrates the critical importance of multiple uses for the lands. The report provides good examples for a more 'capitalistic' approach to public land management based on private land models.

Section 2: Confined Animal Production Agriculture

Confined Animal Production

The industries discussed in this section include:

- beef cattle (feedlots)
- dairy
- swine
- chicken and eggs
- turkey
- mink

What is Confined Animal Production Agriculture?

Animal production agriculture refers



to animal feeding operations, or AFOs. These operations produce large numbers of animals in a relatively small space.

AFO/CAFO

An Animal Feeding Operation is a facility that maintains animals in a confined space, for a specified period

of time, in order to ready animals for market sale. Concentrated Animal Feeding Operations, or CAFOs, are essentially larger AFOs. The difference between an AFO and a CAFO is the number of animal units within an operation. An animal unit is equivalent to 1,000 pounds of animals (figure 4). This unit was originally developed to describe a mother beef cow and her calf, which generally average about 1,000 lbs.

In 2010, the Utah Legislature amended Utah Code (4-18) to include the Utah Conservation Commission as a partner and advisor to the Utah Department of Environmental Quality in regulations related to AFOs and CAFOs. The legislation also included language that provided Environmental Stewardship Certificates to agricultural producers exemplifying quality management practices. The Utah Conservation Commission provides oversight for certification.

Beef (feedlots)

Beef cattle finished in feedlots are fed higher percentages of grain. Corn is the main staple used for maximum daily weight gains. As a result, most calves coming off the range in the fall are shipped out of state to areas of the country where these sources of feed are more abundant. With escalating energy costs, including transportation, it is becoming more economically viable to finish cattle in Utah. While we do have feedlots and processing facilities in the state, their current capacity is not equal to the amount of cattle raised here.

Are you an AFO or a CAFO?

Large CAFO

- 1000+ Beef, heifers, or calves
- 700+ Cows (milking or dry)
- 125,000+ Layers
- 55,000+ Turkeys
- 2,500+ Swine (>55 pounds)
- 10,000+ Swine (<55 pounds)
- 10,000+ Sheep
- 500+ Horses

Medium AFO

- 300-999 Beef, heifers, calves
- 200-699 Cows (milking or dry)
- 37,500-124,999 Layers
- 16,500-54,999 Turkeys
- 750-2,499 Swine (>55 pounds)
- 3,000-9,999 Swine (< 55 pounds)
- 3,000-9,999 Sheep
- 150-499 Horses

Small AFO

- 1-299 Beef, heifers, calves
- 1-199 Cows (Milking or dry)
- 1-37,499 Layers
- 1-16,499 Turkeys
- 1-749 Swine (>55 pounds)
- 1-2,999 Swine (<55 pounds)
- 1-2,999 Sheep
- 1-149 Horses

Figure 4—Animal feeding operation definitions

Section 2: Confined Animal Production Agriculture...Continued

Dairy

The number of dairies in Utah has been decreasing over the last 40 years. In 1970, the number of dairy

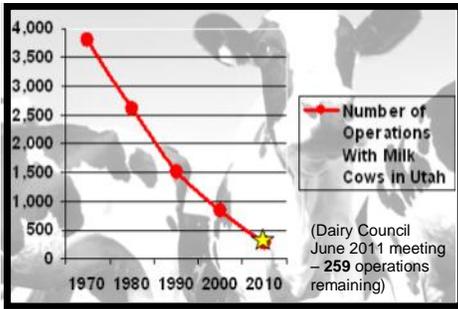


Figure 5—Number of Utah Dairy Farms 1970-2010

farms in Utah was approximately 3,800. The Utah Dairy Council reported in 2010 that there were 259 dairy farms in the state. (figure 5). However, despite the declining number of dairies, the number of milk cows on farms in Utah has actually increased. Consequently, today's dairies are much larger than they were in 1970.

Furthermore, the amount of milk each cow produces has also increased dramatically. In 1940, the average cow was producing just over 5,000 pounds of milk per year. A Utah cow in 2010 produced more than four times that amount: an average of 21,000 pounds of milk per year. This statistic indicates that the overall amount of milk being produced in the state today has actually *increased* compared to the amount produced in 1970.

Swine

The number of hog farms in Utah has also declined over the past 40 years. In 1970, there were 2,000 hog farms in Utah. By 2007, only 610 farms

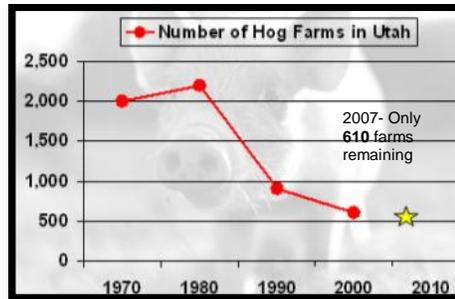


Figure 6—Number of Utah Hog Farms

remained (figure 6). Hog numbers in the state have traditionally been volatile. From 1950 to 1990, the number of hogs in Utah declined from 84,000 to 33,000. In about the year 2000, the number of hogs had jumped up to 650,000 animals as a result of the opening of Circle Four Farms in Milford, Utah.

Poultry and Egg Production

Utah egg production has been steadily increasing over the years. Since 1960, the average number of hens laying eggs has more than doubled and the eggs per laying hen has also increased; in 1970, there were 271 million eggs laid in Utah — by 2010, the number of eggs laid had increased to 920 million (figure 7).

The egg market, however, is currently undergoing many changes. In addition to traditional production, we now have another market of eggs produced by chickens raised in larger cages. Regardless of cage size, it is the price of eggs that has been the largest determining factor in predicting which eggs consumers will choose to buy. A recent survey of egg prices in Utah markets indicated that eggs produced using traditional methods cost anywhere between \$1.30 to \$2.00 per dozen. For the eggs produced using new methods with larger cages, the cost varied from \$3.50 to \$6.00.

Some consumer surveys also indicate that shoppers are willing to pay higher prices for eggs produced using non-traditional methods. The State of California recently passed a law that requires these new methods. Sixty-seven percent of California voters approved this measure, yet only five percent of California consumers actually *buy* the higher priced eggs. Nonetheless, these changes to egg production are still occurring. Ulti-

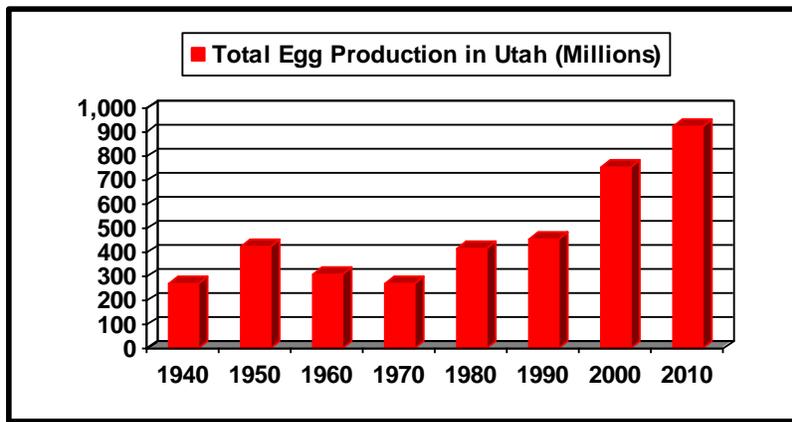


Figure 7—Total egg production in Utah

Section 2: Confined Animal Production Agriculture...Continued

mately, it will be the consumers that have the final say in how eggs are produced in Utah, based on their purchasing habits.

Turkey

Utah is one of the lone turkey producing states in the West. Information on Utah turkey production is limited because there is only one major producer, Norbest. There is always a concern about sole-source data because revealing production figures could reveal proprietary information.

The Task Force was able to obtain information about Turkey production from Sanpete County, Utah, the largest turkey producing area in the state. These results showed that Sanpete County had 125 producers in 1960 that supplied 2.5 million birds to processing plants. Today in Sanpete, five million birds are supplied to processing plants from only 47 producers. Thus, the county now produces double the amount of birds with less than a third of the producers.

Turkey production in the United States has grown. In 1975, about 120 million turkeys were produced in the U.S. By 2007, that number had increased to 275 million (figure 8).



Sanpete County Turkeys

1960– 125 Producers = 2.5 million birds
Today– 47 Producers = 5 million birds

Mink

In 2009, Utah was the second largest mink producer in the US. Yet the number of mink farms in Utah has been in decline for 40 years. In 1970, there were 260 mink farms in Utah, but by 2007 only 65 farms remained (figure 9).

As in other agricultural industries, mink farms in Utah are increasing in size. In 1975, there were approximately 308,000 pelts produced, in 2010, there were 615,000 produced. The average price per pelt has also increased. Recently, the price has been at an all time high. In 1975, mink sold for about \$25 a pelt. By 2010,

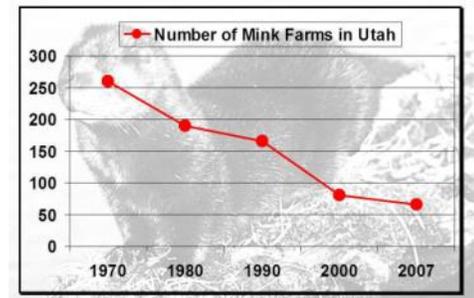


Figure 9—Number of mink farms

the price had risen to \$65 per pelt.

Federal Regulatory Burdens

There are three main issues regarding the regulatory burdens on farmers.

Increasing federal regulatory mandates with a 'one-size-fits-all' approach puts excessive pressure on agricultural businesses.

However, state driven programs that connect farm operators with local support groups and local regulatory authorities allow for greater communication and opportunities to find streamlined solutions to problems. Cooperative voluntary programs that reward agricultural producers with environmental stewardship incentives have proven to be the most effective models for compliance in Utah.

Every Farm Counts

Because there are fewer farms producing more animals and products in each of these segments, the impact of losing even one more farm will be greater than in the past.

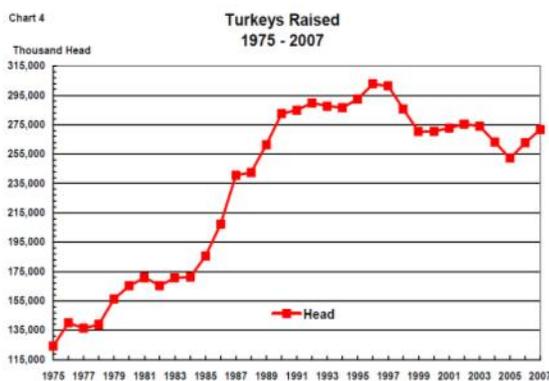


Figure 8—National turkey production

Section 3: Grains, Specialty Row Crops, Fruits & Vegetables

Utah History and Climate

Utah is the second driest state in the nation. The average annual precipitation in the valleys varies from 10 to 15 inches per year. The length of the growing season also varies, depending mostly on elevation. Our growing season ranges from a short season of approximately 60 days, to a longer season approaching 190 days. The different lengths of our growing seasons allow different areas of the state to produce different agricultural products.

Grain Production

Grain production including wheat, barley, grass hay and alfalfa, show very similar trends when compared to other sectors of Utah agriculture. The total acreage under production in these sectors has declined, however, the total *yield per acre* has increased, thus indicating our ability to better maximize our output with the given inputs. When adjusted for inflation, the prices for all commodities in this sector have remained relatively stable over time.

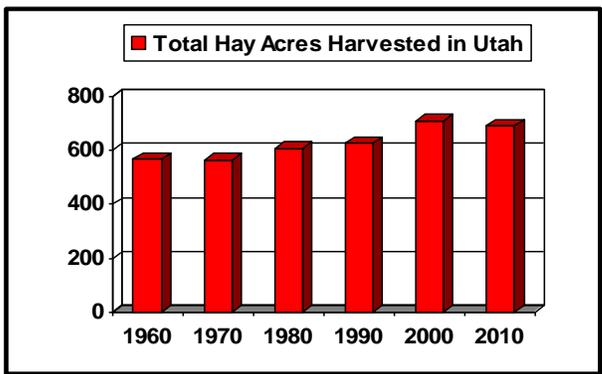


Figure 10—Total acres of hay harvested in Utah

The only anomalies among these commodities are those of grass hay

and alfalfa. Both show a slight increase in number of acres under production (figure 10). This reflects the amount of grass hay and alfalfa exported out of our state. In fact, 99 percent of all hay exported out of the country comes from Utah, California, Idaho, Washington, Nevada, Oregon, and Arizona (NAFA, 2008).

Additionally, early estimates for 2011 show that hay prices are rising in Utah. The prices are projected to reach \$180 a ton. Many farmers are already receiving upwards of \$230-250 a ton for their hay (Merlo, C. 2011).

Corn

Most corn in Utah is produced as feed or silage for livestock herds. However, as a nation, we subsidize the corn market for ethanol, a product we don't produce in Utah. The subsidies have resulted in substantially higher prices for corn and all grains. These higher prices have created an extreme hardship on the dairy, poultry, and hog industries. The price of grain is now tied to the price of oil. The wide

swing in oil prices has created tremendous instability in the production costs for our protein farmers. It has also resulted in increased meat and dairy prices for consumers.

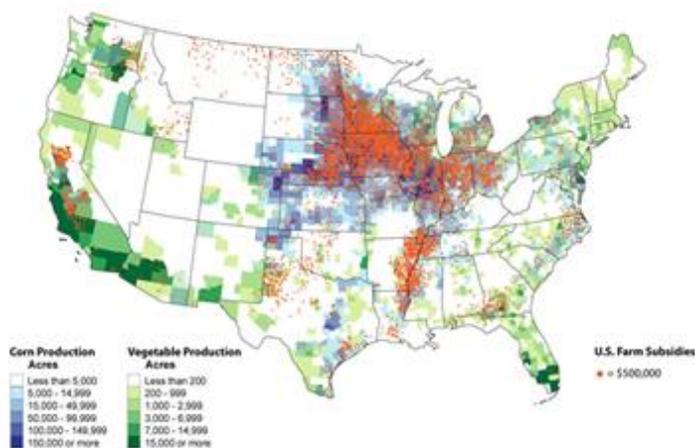


Figure 11—Number of farms receiving corn subsidies nationally

The orange dots on this map show the Farm subsidies throughout the country. The majority is throughout Iowa, down the Mississippi River, and you can see the three lonely dots in Box Elder County.

Fruits and Vegetables

The pioneers brought many different fruits with them when they settled the area. The first organized steps to grow fruit in the state came in the 1890s with the beginning of the Utah Agricultural Experiment Station at Utah State University; a laboratory that tested the susceptibility of growth for various fruits. This experimentation soon led to a boom in commercial orchards, and ultimately, surpluses in production.

By 1947, the number of fruit trees in production was only half what it was in 1914 and the industry began to stabilize. Urbanization had pushed

Section 3: Grains, Specialty Row Crops, Fruits & Vegetables...Continued

fruit production to the fringes of cities and caused a rapid erosion of the industry. By 1970, the fruit industry began a revival as growers started buying cheaper land outside of urban areas. Many fruit producers moved and developed land around southern Utah County.

As part of that expansion, we've seen significant growth in tart cherries and apple trees. They are now two of the largest fruit crops produced in the state. Nationally, Utah ranks second in tart cherry production. Our cherries are produced primarily for processing and canning.

Utah also ranks high nationally in the production of other fruit. We are third in production of apricots, eighth in sweet cherries, ninth in pears and 18th in peaches.

Utah County is the state's, largest producer of tree fruit, except apricots. Box Elder County is the second largest producer, followed by Weber and Davis. Cache, Washington, Grand, and Emery are the most important fruit producing counties located outside the Wasatch Front (Utah History Encyclopedia).

The Green River area produces most of the melons grown in Utah. Raspberries and other berries for direct sales and commodity sales are grown mostly in Rich, Cache, and Box Elder counties.

Most vegetables grown in Utah are

marketed directly to stores or consumers. Onion production in Davis and Weber counties account for the only significant vegetable commodity production in Utah.

Bees and Honey

While there is a growing backyard and urban beekeeper population in the Beehive State, there are roughly 26,000 commercial honey producing colonies in Utah. Those colonies produce 780,000 pounds of honey annually (Utah Agricultural Statistics). Additionally, many Utah bees spend the winter in nearby states with warmer climates pollinating citrus, berry, flower and vegetable crops.

Split Estates

With less than 18 percent of Utah land privately owned, increasing pressure for energy development on farms and ranches with split estates, where the surface and the mineral estates have different ownership, creates greater potential for conflict. Many of these farms and ranches produce hay and grain that require irrigation. To provide a stable environment, one which promotes agricultural production and protects the financial investments on surface properties, while not adversely impacting energy development activities, we recommend:

- Reasonable accommodation for oil and gas developers should include accommodation for surface rights and investments by



mitigating intrusion. Exercising due regard for preservation of the property through technology, such as directional drilling, should also be considered.

- Good faith negotiations should be rendered between mineral rights and surface rights owners. Oil and gas developers should reach agreement to protect surface property resources and provide adequate compensation for loss of crops, surface damages, and loss of value to surface owners' property rights.
- An independent mediation process for conflict resolution should be provided.

Public policy should provide protection for privately held surface rights that are at least equal to federal statutes that protect BLM administered surface properties, and state statutes related to privately held surface properties and SITLA owned mineral rights.

Section 4: Food Security—Urban Interface

Food Security

Local farming gives us the ability to feed local people independent from outside influences.

The Urban Interface

The ‘Urban Interface’ is the area where urban and rural land uses intermingle and sometimes clash. In Utah, as growth pushes development further into the countryside, new development occurs on converted agricultural lands near urban areas. Agricultural lands on the urban fringe play several important roles to nearby communities.

Keep revenues in the local economy

It is estimated that only 20-25 percent of the retail cost from fresh fruit and vegetables is retained by the farmer. The remaining 75-80 percent is filtered into marketing, transportation, processing, retailing, and other services external to the farmer (Stewart, 2006). Local food production and direct-to-consumer sales increase the percentage of profit that farmers receive and are much more efficient for local economies (Schwartz, 2009).

They put the consumer close to the product

According to a study commissioned by Envision Utah, 32 percent of Utahns have lived or worked on a farm in their lifetimes, yet only three percent *currently* live or work on a farm. This study demonstrates that agriculture close to urban areas can become key educational tools to teach future generations about the origins of their food.



The above photograph is a good example of the urban interface. Suburban development has expanded to meet up with farmland. The absence of major roads and a city center suggest that this development represents the urban fringe of this area.

Provides ‘local food’ options

Many Utahns are looking for locally-grown produce. For them, eating local food protects the environment, improves personal health, enhances the freshness of the food, and contributes to the local economy. Having agricultural lands close to population centers is a critical element in serving the need for locally grown food.

Local Food Production (Direct-to-Consumer sales)

Farmer’s Markets

Nationally, the number of farmer’s markets increased by 17 percent in 2011 (USDA, 2011). Utah also added new markets and new shoppers this year. Several examples illustrate the growing popularity of

Farmers markets:

- Since 2007, attendance at USU’s Botanical Center Farmer’s Market saw a nearly 300 percent increase (Olsen, 2011).
- The number of vendors at the Cache Valley Gardener’s Market went from about 40 vendors in 2006 to about 100 vendors this year (Huball, 2011).

“The ‘Urban Interface’ is the area where urban and rural uses intermingle and sometimes clash.”

Utah Agriculture Sustainability Task Force

Section 4: Food Security—Urban Interface...Continued

- Currently, there are 13 farmer's markets in Salt Lake County—two of which are new to the valley this year.
- The Downtown Farmer's Market in Salt Lake City that started with five vendors currently has over 300. Regular Saturday attendance now averages nearly 10,000 people. Gross revenues for the market have increased by over 500 percent since 2004 (Farley, 2011).

Community Supported Agriculture

Community Supported Agriculture (CSA) programs have also grown. In 2004, only four CSAs existed in the State. Today, there are at least 30 CSAs (CSA Utah). In a CSA, individuals pay for a share of the farmer's product up front, thus sharing the risk of poor yields, and the benefit of excesses, among shareholders.



Local Food Production / Local Economic Benefit

Between 1997 and 2007, direct-to-consumer sales, such as farmers markets, rose by 105 percent — two times faster than total agricultural sales. At the same time, the number of farms selling directly to the consumer increased by 24 percent. Direct to consumer sales is a small, but economically important, sector of agriculture.

History of Urban Agriculture

Local food production has increased in popularity in recent years, but, the need and desire for locally-grown food is not new. The United States has seen at least six periods when urban agriculture was an important source of local nutrition.

- During the recession of the late 1800s, school gardens and vacant-lot cultivation began as a way to save money and improve public health.
- During WWI reduced agricultural production in Europe resulted in increased demand and higher prices for U.S. farm product. *Liberty Gardens* began as an answer to higher prices and because local farm production was needed to aid the war effort.
- During the Great Depression, relief gardens established by city governments provided

opportunities for food and work. The federal government gave over \$3 billion to such programs during the years of 1933 to 1936.

- During WWII, community gardens provided up to 44 percent of the nation's vegetable production. The War Food Administration created a National Victory Garden Program to free up transportation fuels and railroad cars for war efforts, produce food for the local population, and preserve finite resources. In addition, these victory gardens were meant to increase morale by getting people outside and connected with the land around them.
- During the 1970s Energy Crisis, community gardens saw a resurgence when increasing energy prices caused food costs to rise. This time, gardens were locally organized by communities themselves, rather than by government-sponsored programs of the Depression and the two world wars that had previously instigated such gardens.
- Recently, citizens have requested opportunities to create community gardens and facilitate home production. In response, many cities have adopted policies to encourage urban agriculture.
- As populations urbanize, land values also increase. Property tax relief for small acreage urban

Section 4: Food Security—Urban Interface...Continued

farming helps maintain local food security.

History of Planning in Utah

Land use planning in Utah has existed since the first permanent settlements. Protecting agricultural lands has always been part of these plans. Early leaders in the state stressed the importance of self-reliance and local food production, often at the expense of economic successes. Territorial Governor, Brigham Young, stated, “The time will come that gold will hold no comparison in value to a bushel of wheat...Gold...is not half as good as the soil from which we raise our wheat, and other necessities of life” (*Journal of Discourses*, 1:, p.250).

In many ways, planners in Utah are looking to the past as they plan a future with an acute focus on relatively dense ‘community centers’ and greater emphases on agriculture and open space in the areas surrounding our urban centers.

Agricultural Land Conversion

Utah is a rapidly growing state. According to the latest census, from 2000 to 2010, Utah was the nation’s third fastest growing state.

In 1960, Utah had fewer than one million residents. Today, our population has reached nearly three million people. This growth has been concentrated along the Wasatch Front and in Washington County. The areas with such substantial growth also naturally tend to be the most favorable climate regions for agricultural success.

“In many ways, planners in Utah are looking to the past as they plan a future with an acute focus on relatively dense ‘community centers’ and a greater emphasis on agriculture and open space...”

Utah Agriculture Sustainability Task Force

Also by 1960, about 250,000 acres of land had been developed in Utah. By 2008, 750,000 acres in Utah had been developed for non-agricultural uses. It is predicted that by 2030, more than a million acres of land in Utah will be developed for urban uses.

The four Wasatch Front counties—Weber, Davis, Salt Lake, Utah—developed approximately 135,000 acres of land between 1988 and 2008, and will likely increase the amount of developed land area by more than 160,000 acres by 2030. The loss of these lands would significantly impair the ability of these rapidly growing counties to provide for their food security. Those four counties along the Wasatch

Front, where much of the growth is taking place are uniquely suited for growing fruits and vegetables.

In a recent survey of land use planners in Utah, most respondents estimated that a substantial amount of viable, working agricultural lands in their communities would be gone within 50 years. Planners are not alone in these fears. As a part of a 1998 Earth Day event, several members of Future Farmers of America submitted essays about open space and future land uses. The Deseret News reported that a common theme among the essays was “...fear that there will be no land [for them] to farm in the future” (Spangler, 1998). Currently, 96 percent of the orchards in Utah are in the rapidly urbanizing Wasatch Front counties or Washington County. These are the only areas of the state that can produce consistent, high yields of fruit. These counties

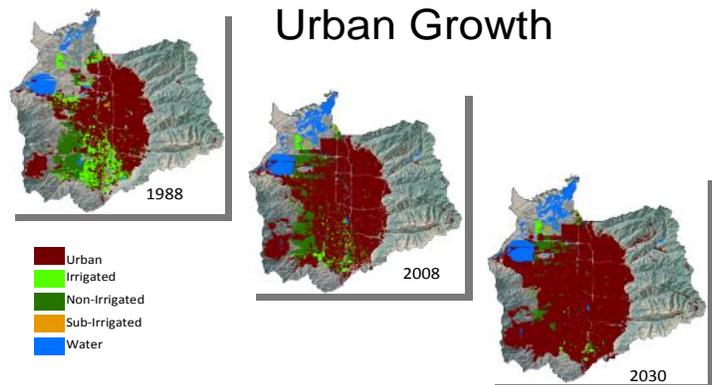


Figure 12—Growth in Salt Lake and Utah counties 1988–2030 (projected)

Section 4: Food Security—Urban Interface...Continued

combined will add nearly 1.8 million more people to Utah by 2050.

Agriculture Sustainability and Food Security

What does ‘sustainable’ mean? One definition is: “capable of being sustained”... “using a resource so that the resource is not depleted or permanently damaged” (Merriam-Webster). This definition is appropriate, yet, it is also important to think about sustainability as, “being capable of *sustaining*”. This definition is implied because the purpose of agriculture *is* to sustain life by providing the food and fiber necessary for human existence.

Planning for Agriculture

The most basic needs of humankind are food, water, and shelter. Without them, life, society, and economies cease to exist. Currently, communities plan for water and shelter, but few local governments plan for food. When planners in Utah were asked which of these three elements their general plans considered, 94 percent of respondents said they planned for future housing needs, 75 percent said they planned for future water needs, and less than 10 percent said they considered future food requirements.

The consequences of not planning for agriculture are serious. According to researchers at the University of Utah, the life-span of a house is about 150 years (Nelson, 2009). Once prime agriculture lands have been paved over, the opportunity to farm is lost



On the left, a subdivision in Perry, Utah, is surrounded by fruit orchards in the mid-1990s. By 2006 (right), development has almost completely filled in the existing orchards.

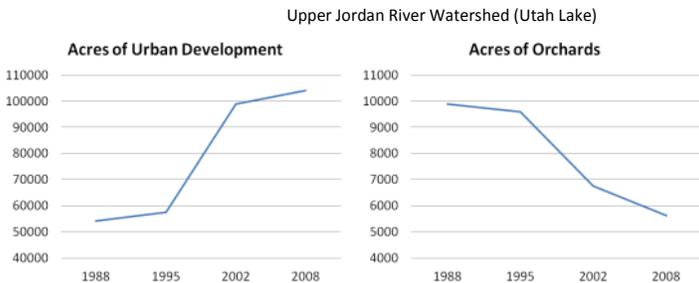
for generations and the resource itself is actually gone. So too, is the ease we once had in our ability to feed ourselves from our own land. In the same way that we are largely dependent upon foreign oil sources for our transportation needs, we may become increasingly dependent upon

outside sources of food for our nutrition needs.

Our food security depends on this ability to plan for agricultural production.



Section 4: Food Security—Urban Interface...Continued



County	Acres	Percent of State Total	Population Increase by 2050
UTAH	5594,298	69%	701,142
BOX ELDER	865,596	11%	52,957
WASHINGTON	644,404	8%	54,156
JUAB	242,758	3%	19,209
DAVIS	210,419	3%	101,231
WEBER	87,980	1%	196,932
CACHE	71,228	1%	156,769

- 69% of the acreage in orchards is located in Utah County
- Utah County is projected to add 700,000 residents by 2050
- 96% of orchards in Utah are in rapidly urbanizing counties

Figure 13—Increased growth in Utah County vs. decreased land in orchards

Supply and Demand

The demand for food will increase with the population. By 2050, the U.S. is projected to grow by 100 million people. During that same time, the earth’s population will increase by three billion people. Only the countries of India and Pakistan are expected to have larger growth rates.

Population increases are a significant concern as they clearly impact our natural resources and food supply very closely. With limited food, fuel, energy, and fiber, also comes increased global competition for these same resources. As the demand for these necessities rises, the supply will decrease. The result will be an increased price of food. Up to 80 percent of the retail cost of

fruit and vegetables is related to transportation, processing, and marketing. The further our food has to travel, the greater the impact fuel costs will have on the price of the food. The reverse is also true.

could Utah grow enough to feed itself? This scenario is not without precedent. During World War II, the United States grew approximately 44 percent of its food locally in ‘victory gardens’. However, since then, Utah has added over two million residents and has converted hundreds of thousands of acres of agricultural lands to urban uses. To help answer the question of how well the State would fare if it had to rely on locally-produced food, Mr. Martin Esplin, a Utah State University graduate student, looked at what Utah currently produces compared to our nutritional requirements.

Food Security

Utah probably does better than most states in encouraging self-reliance and emergency preparation. As such, we would do well in a short-term, localized, disaster. However, in the event of a global crisis, such as prolonged war, disease, energy shortage, or economic hardship,

Utah’s Production vs. Utah’s Nutritional Need

The purpose of this study was to compare Utah’s agricultural production to its nutritional needs to answer the question:

Does Utah produce enough food to feed its population?

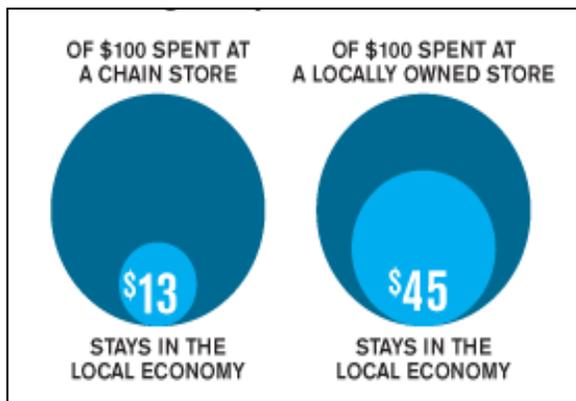


Figure 17—Business Week, February 2010

Buying local not only supports local agriculture but keeps money in the local community—
http://www.businessweek.com/magazine/content/10_09/b4168057813351.htm

Historically, Utahns had to sustain themselves with local production. Now, produce can be transported thousands of miles to reach our tables, a convenience that leads us to be less dependent on products grown locally. Because of the affordability and ease of transporting food, people are blessed with a great variety of agricultural products throughout the year. In this situation, one might ask,

Section 4: Food Security—Urban Interface...Continued

why worry about food origin? If the stability we presently enjoy were threatened by economic instability, political crisis, or natural disaster, the transportation of food could be interrupted. If this were to happen, local supplies would become extremely important. Even without future crisis, the rising cost of fuel will affect the transportation of food and the price that we pay for it.

What are the nutritional needs of Utahns?

USDA standards offered at the website *choosemyplate.com* provide information about individual servings needed, sorted by age and gender. An average of these categories was used to calculate the amount of food needed to feed an individual for a day in each of the five basic food groups. This number, multiplied by the population of the state, was used to determine how much food Utah needs to feed its population for a day. Then *that* number was multiplied by 365 days to

calculate the food required to feed Utah citizens for a year.

The 2010 Utah Agricultural Statistics and Utah Department of Agriculture and Food Annual Report provided information on how much food Utah produces. The study compared the state's consumption with the reported production. The comparison for each

only. The recommendation from USDA is an average of three 8 oz. servings per day per person. This average was used to

calculate our dairy needs. Utah has a comfortable surplus of milk production to meet its nutritional needs in this category (figure 14).

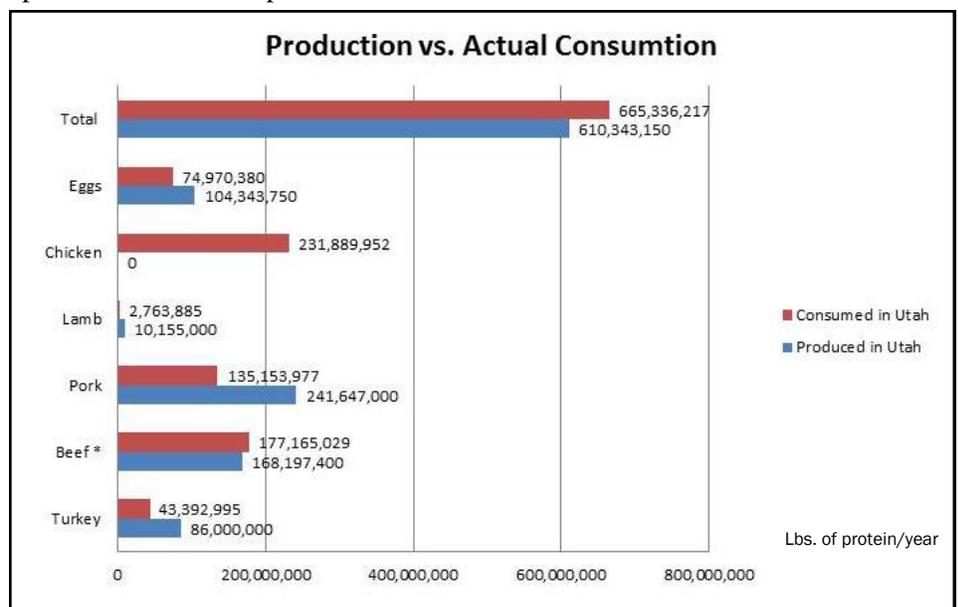


Figure 15—Meat production vs. consumption

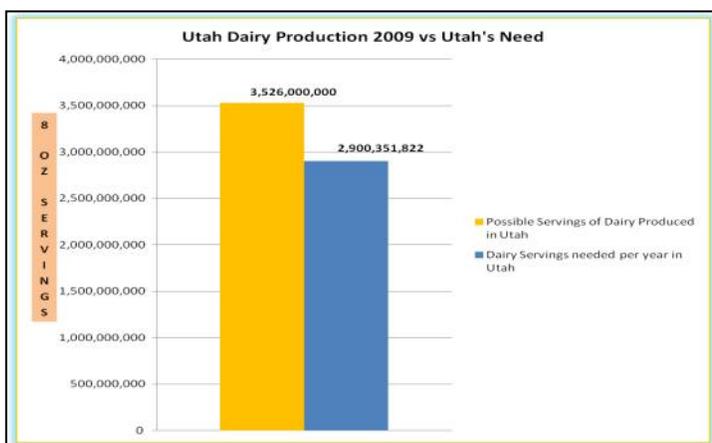


Figure 14—Dairy production vs. consumption

of the five categories—grains, dairy, meat/protein, vegetables, and fruit—is explained in the following paragraphs.

Dairy

This study computed dairy consumption as milk

Meat/Protein

In this study, meat is used as the sole source of protein. Products such as soy, nuts, and beans are not abundant enough to be considered significant protein sources.

The sources of meat in the report are beef, pork, lamb, poultry, eggs, and trout. Most Utah cattle ranches are cow-calf operations. Cattle are often sold out of state for finishing, and are not included in the calculation of

Section 4: Food Security—Urban Interface...Continued

available protein sources. However, we produce a lot more cattle than we process. The study methodology inventoried cattle processed in Utah and includes animals brought in from outside sources.

Actual meat production in Utah indicates we produce slightly less protein than we consume.

Produced protein totals in 2010 were estimated to be 610,343,150 pounds of eggs, chicken, lamb, pork, beef and turkey combined. For that same year

Utahns consumed an estimated 665,336,217 pounds of protein from the same sources (figure 15).

Beef production totals are three percent less than the consumption rate of Utahns. It is important to note that public and private lands are used to sustain the beef industry.

Healthy rangelands and watersheds are an important factor in maintaining the livestock industry in Utah.

Grain

Utah produces a number of grains. Our wheat is primarily grown for hu-

man consumption. Other grains, such as barley, oats, and corn, are reserved for animal feed. In 2009, Utah's grain needs exceeded Utah's wheat production by a small margin (figure 16).

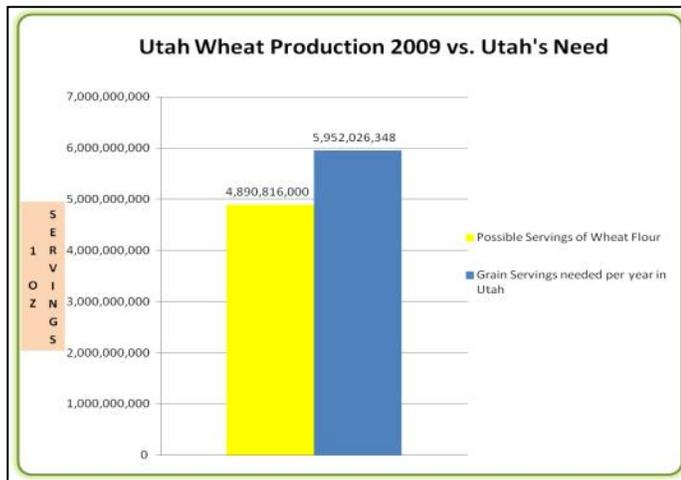


Figure 16—Wheat production vs. consumption

Vegetables

The amount of vegetables produced in Utah is not available in the 2010 Utah Agricultural Statistics report. Utah *does* produce vegetables, but the amounts are only collected every five years. Based on past data, we do

not commercially grow nearly as many vegetables as we consume. In the case of vegetables and fruits, these essential parts of human nutrition can only be grown in certain parts of Utah where the climate is favorable. However, these are also the areas where most growth in our state is occurring. As our population grows and prime lands for vegetable production are developed, the gap between how much we grow and how much we consume will continue to increase.

Fruit

Utah is second in the nation for the production of tart cherries. Other fruits produced in Utah are apples, sweet cherries, peaches, and apricots. Utah produces roughly 10 percent of the fruit it needs (figure 17). Utah's climate and elevation limit the places where fruit can be grown commer-

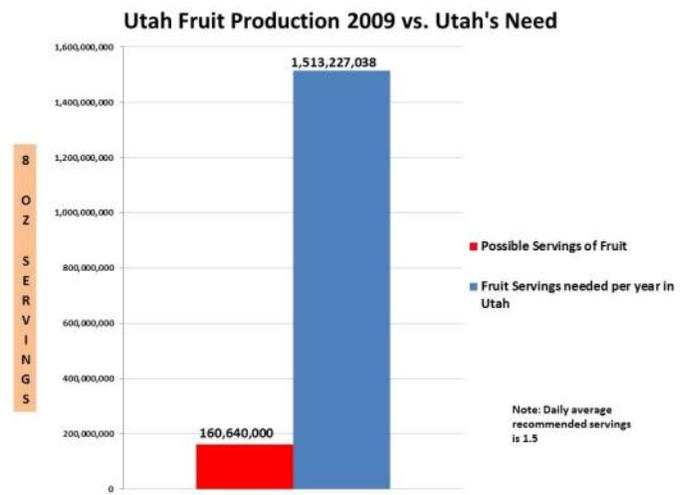


Figure 17—Fruit production vs. consumption

Section 4: Food Security—Urban Interface...Continued

cially. Unfortunately, these areas are also the most threatened by development.

Utah's farmlands are a precious commodity. They are critical for Utah's agricultural self-reliance. Rates of agricultural productivity have increased over time, meaning farmers have been able to maintain production levels with less land. But, this trend cannot be sustained very far into the future. Once agricultural land is converted for other uses it is lost forever.

Further research is needed to establish the amount of land required to support our food independence. Clearly though, we need to protect some farm lands to ensure local food production while also accommodating the demands of development in order to meet the needs of Utah's growing population.

It is clear from this study that Utah farmers and ranchers currently do not produce enough food overall and in most individual sectors to feed our population. In all agricultural lands, and especially the prime fruit and vegetable growing soils along the Wasatch Front, every acre counts. Policies need to be developed to help protect these valuable resources. However, often times current policies actually work against protecting farmland.

Eminent Domain Issues: The West Davis Corridor



*Advertising locally grown Utah produce in a local grocery store, 2011.
Photo by Evan Curtis*

Metropolitan areas along the Wasatch Front have added transportation pressures as the population has increased. Transportation corridors have historically taken agricultural properties through eminent domain, a legal seizure of private property for public good. The approval of an additional corridor is currently proceeding through the National Environmental Policy Act (NEPA) process. This example shows, once again, that our most valuable farmland and prime soil may be lost to transportation and development simply because it is the path of least resistance.

Davis and Weber counties have some of the best soils available in Utah. They are home to a unique

micro-climate that is better suited than anywhere else in the state for growing many high-value vegetable crops. Many of these vegetables are grown on 62 Century Farms in the area. Utah needs every possible acre of these lands to maintain a critical mass to sustain agriculture along the Wasatch front. Where food security issues are concerned, the protection of prime agricultural lands should be given at least the same or higher consideration as other lands by federal agencies, the State of Utah, and its political subdivisions. It is important to conserve these lands for our food security needs.

Appendix I: Issues Overview

As the Utah Agriculture Sustainability Task Force, we focus on eight issue areas and work to develop strategies and actions for all eight of these categories.

The issue areas are:

- Food Security
- Invasive Species (including weeds)
- Grazing Improvement
- Immigration
- Urban Agriculture
- Agriculture Promotion and Profitability
- Next Generation Farms (young farmers)
- Irrigation Infrastructure

“Prime and unique agricultural lands and soils are the most important lands for sustaining life.

Utah Agriculture Sustainability Task Force

Food Security

We propose that the Utah State Legislature make the following statement: “Prime and unique agricultural lands and soils are the most important lands for sustaining human life. The value of these lands surpasses the value of wetlands, lands that are home to sensitive species, and nearly every other conceivable use, and should be reserved for our food security needs.”

We propose introducing and funding conservation easement legislation that gives priority to important pro-

ductive agricultural lands with prime soils.

We propose legislation to create a separate greenbelt designation for smaller-acreage productive operations.

We propose legislation to dedicate greenbelt rollback monies to conservation easements or other productive agricultural uses within the county where rollback funds are generated, and to enable local conservation districts to make recommendations to county commissions related to the use of these annual rollback funds.

We propose that the legislature provide new monies to the LeRay McAllister fund to match funds for agricultural conservation easements that give priority to important productive agricultural lands with prime or locally important soils.

We propose that the legislature, the League of Cities and Towns, the Association of Counties, and other interested parties work to create local zoning options that recognize the importance of agriculture for the citizens of Utah and protect agricultural land uses from unwanted encroachments. We also propose that local governments develop specialized local food security plans to work toward these goals.

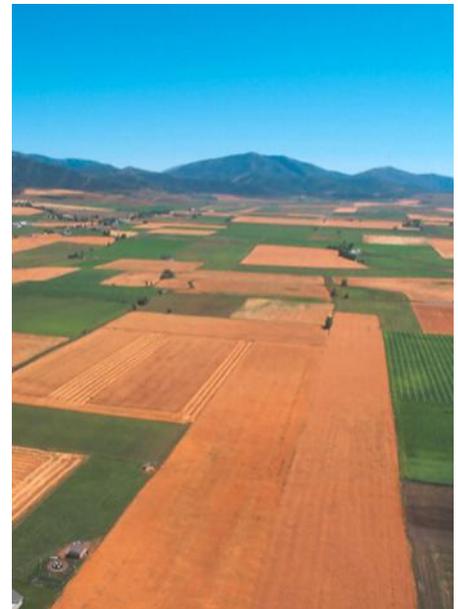
We propose Utah law be amended to create requirements that fund offset replacement of lost agricultural lands. We further propose a legislative policy that develops equity between current wetland protection and

these new agricultural protection laws.

To accomplish these tasks, we will increase the capacity of the Utah Department of Agriculture and Food to assist directly in the planning of state and local agricultural preservation processes.

We propose that Utah law be amended to encourage energy producers to work with the owners of surface rights on split estates to minimize lost agricultural production. We also encourage the use of directional drilling and other techniques to minimize the impacts on agricultural lands.

We will work with our federal counterparts to promote food security by developing a statement that urges the federal government to eliminate subsidies for agricultural products used in energy production.



Appendix I: Issues Overview...Continued

We also propose a statement urging federal adoption of state environmental stewardship oversight.

Invasive Species (including weeds)

The spread of invasive species is another critical agricultural issue addressed by the Task Force.

We propose improvements in the inventory of invasive species in Utah by more clearly defining the role of county weed boards in statute, and by identifying and prioritizing weed control measures. We propose that the State Legislature provide a \$1,000,000 increase in weed control funding from the State's general fund in order to accomplish this.

Because motor vehicle use, hiking, camping, and other activities, often spread weed seeds, the Task Force also recommends that the legislature look at other sources of funds including: the money earned from unclaimed property, licensed trailers, noxious weed impact fees from recreational ATVs, gravel pit fee assessments, collection of a portion of the sportsmen fees gathered from the Utah Department of Natural Resources, and money gleaned from



submittal of requests to create federal block grants to fight invasive species on federal and state lands. We also support the work of the Dupont Healthy Habitat Coalition in promoting these block grants.

In addition to asking for funding to mitigate damage from invasive species, we propose the establishment of a public outreach and education campaign to educate the public on how to stop the spread of invasive species.

Grazing Improvement

We propose a continuation of recent successes in grazing management programs by providing \$1,000,000 of on-going state funding to the Utah Department of Agriculture and Food to increase coordinated resource management planning at a large scale. Where feasible, this money will facilitate the development of grazing management plans at a landscape level, and will support the funding of watering facilities, fencing improvement, weed control to complete these landscape-scale grazing improvement plans, and maintenance and increased management costs.

Landscape level management requires both grazers and browsers on the range. Cattle and elk are grazers; sheep and deer are browsers. Range conditions can improve if the populations of mule deer and sheep are increased on many Utah ranges. To insure better health of both wildlife and livestock herds, we propose an increase in the funding and effectiveness of predator control, and an al-

lotment of reasonable and sufficient compensation to agricultural producers for natural wildlife impacts that may disrupt agricultural production, especially of sheep.

Immigration

We support Utah house Bill 116 because an ample, sustainable and legal workforce is the key to sustaining our farms and ranches.

We propose that the Utah Legislature pass a resolution calling on Congress to create a national agriculture guest worker program. We oppose E-verification until federal guest worker

“We support Utah house Bill 116 because an ample, sustainable and legal workforce is key to sustaining our farms and ranches.”

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laws are in place.

Urban Agriculture

The Utah Department of Agriculture and Food (UDAF) will work with local governments to create or improve urban and backyard agriculture-friendly zoning ordinances.

We will also encourage state and local governments to use vacant government-owned land as small-plot agriculture areas to increase the accessibility of agriculture in our increasingly urban settings.

We propose the monetary support of

Appendix I: Issues Overview...Continued

farmers' markets and Community Supported Agriculture (CSA) promotion programs to strengthen the connection between farmers and the public via advertising and the direct exchange that occurs in these settings.

We also propose the funding of start-up agribusinesses by providing financial support to small-scale agricultural operations for infrastructure which help them develop new products and business opportunities. A specialist at the UDAF will be assigned to help with new agriculture operations, navigate licensing and food safety requirements, and educate start-up businesses about the importance of networking and marketing opportunities in these ventures.

Agriculture Promotion and Profitability

We propose improving local processing capacity by working with the Governor's Office of Economic Development to support processing facilities in all sectors of agriculture. We recognize the need to increase cull cow processing facilities.

We also propose developing incubator kitchens in each county to provide small-scale agricultural start-up processing businesses with a place to test new products.

We propose improving agricultural product distribution capacity by supporting the existing *Utah's Own* program to provide incentives for local stores when local products are bought and advertised first. This helps to create incentives and/or legislation to encourage school lunch programs,

“We propose improving local processing capacity by working with the Governor’s Office of Economic Development to support processing facilities in all sectors of agriculture.”

state agencies, and other public sector services, to buy Utah products first (when available). We encourage the creation and funding of central distribution points for the purchase of local Utah agricultural products, and we



plan to promote innovative agricultural practices and products in our partnerships with food buying groups, restaurant groups and emerging businesses.

Next Generation Farms (young farmers)

We support additional coordination with Utah State University (USU) and other agricultural support groups to develop and implement business planning and farm transfer programs that will complement retirement and insurance programs for current farmers and ranchers.

We support efforts to match farmers without identified successors with their younger counterparts who are seeking opportunities to purchase or lease farms or ranches. We also en-

courage the financial community to finance farm ownership transfer.

Irrigation Infrastructure

We propose that UDAF work with conservation districts in a statewide effort to map irrigation systems.

We support educating the public about the irrigation needs of agriculture and the benefits of well-maintained irrigation delivery systems. We propose that the legislature augment existing funding or develop alternative funding sources to improve and update irrigation systems and technologies.



The Task Force recommends that the legislature work with the Utah Congressional delegation to support legislation to provide funding for improved water infrastructure.

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Food Security

Goal: Ensure the protection of Utah's critical farmlands by working with local, state and federal partners

STRATEGIES:

- Develop a policy statement that increases our commitment to food security by maintaining our prime agricultural land base for local food production
- Preserve farmland through easements
- Balance zoning between development and agriculture, including a policy for the transferring of development rights
- Create mitigation process for agriculture land taken by eminent domain
- Increase urban and backyard farming
- Influence federal legislation to provide for energy and environmental stewardship

ACTIONS/TASKS:

- Devise food security legislation
 - Determine what kind of statement would be needed in State law (Food Security Act) to elevate prime farmland (conflicts with wetlands) for food production?
 - Promote locally produced food
 - Include legislative statement: Nothing is more important than prime agriculture soils. These lands surpass the value of wetlands, invasive species, sensitive species, etc.
- Easements
 - Provide increased funding for agricultural easements to those who would like to take advantage of the program
 - Develop solutions to implement term easement options
 - Support range of easement term options
 - Modify greenbelt designation and rollback tax laws
 - Develop agricultural land preservation criteria that identifies and maintains local agricultural capacity and decision making by identifying:
 - Prime and unique soils
 - Agricultural lands in areas of moderate climate conditions
 - Agricultural lands with adequate water availability
 - At-risk industry-specific agricultural production
 - Local program administration and oversight

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Food Security ...Continued

- Easement legislation should include:
 - Priority given to important productive agricultural lands, and prime or important soils
 - Funding:
 - Dedicating rollback monies or other productive agricultural uses to conservation easements in that county (e.g. insufficient funds for easements) (class of county)
 - Recommendation that the legislature fund the LeRay McAllister fund
 - Governance
- Support local Conservation Districts and make recommendations to County Commission to approve such recommendations
- Advocate local zoning
 - Work with local governments to educate them about zoning options (Santaquin City example)
 - Develop policy for local food security plans
- Produce eminent domain mitigation
 - Require funding for offset replacement of lost agricultural land
 - Develop legislative policy that develops equity between wetland protection laws and agricultural protection laws
 - Increase capacity of UDAF to contribute to state and local planning processes
- Encourage urban and backyard farming
 - Promote local ordinances that encourage urban farming
- Influence federal legislation
 - Eliminate subsidies for food products used for energy production
 - Deliver proposed statement to Federal government
 - Promote State Environmental Stewardship oversight, thus reducing federal environmental mandates
 - Protect agricultural interests related to split estates (impacts of oil production on farmland)
 - Provide statement to consider production that is lost
 - Ombudsman help:
 - When possible, work around agricultural properties (directional drilling)
 - Support legislative efforts

OUTCOMES:

Outcomes related to farmland protection include increasing local and state capacity to preserve and protect critical agricultural land for the production of food in the face of a rapidly increasing population.

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Invasive Species, including weeds

Goal: More effective coordination for weed control on public and private lands

STRATEGIES:

- Improve the inventory of invasive species in Utah
- Increase funding sources for invasive species management
- Devise public outreach campaign
- Promote federal legislation related to invasive species control

ACTIONS/TASKS:

- Improve weed inventory
 - More clearly define county weed boards (statutory clarifications)
 - Conservation District Board involvement
 - Identify and prioritize weed control measures
- Consider funding invasive species management
 - Increase state funding for invasive species control by \$1 million from the general fund (mix of ongoing and one-time)
 - Consider other possible State funding sources:
 - Money from unclaimed property
 - Licensed trailers
 - Noxious weed impact fee on recreational ATV/vehicles
 - Gravel pits
 - DWR/DNR (sportsmen fees)
 - Ask for federal block grant funding to fight invasive species, especially related to Federal lands
 - Dupont Healthy Habitat Coalition—state block grants
- Create public outreach campaign
 - Appropriate state funding for a Quagga Mussel-style public education campaign
 - Give priority to organizations that include volunteerism
- Investigate federal invasive species control programs
 - Lobby for Farm Bill State block grants for invasive species grants
 - Coordinate with federal agencies to increase invasive species control efforts

OUTCOMES:

Outcomes related to invasive species include increasing weed control, improving watershed health, and increasing forage quality and quantity for the livestock and wildlife of Utah.

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Grazing Improvement

Goal: Improve grazing management strategies and infrastructure that enhance landscape and watershed health, and improve sustainable production on public and private lands

STRATEGIES:

- Promote proven, science-based grazing management strategies, especially at landscape scale
 - Help bridge the financial gap to implement watershed scale management improvement projects and allow it to become economically sustainable in the future
- Work with partners to incentivize the balance between grazers and browsers
 - Grazers: cattle, elk
 - Browsers: sheep, goats, deer
- Promote/support Utah's livestock industry as the economic mainstay for rural communities

ACTIONS/TASKS:

- Appropriate \$1 million of 'on-going' legislative monies to fund grazing management (Coordinated Resource Management planning)
 - Increase funds, and leadership to enhance locally driven, large-scale, Coordinated Resource Management Planning (CRMP)
 - Improve coordination between state and federal resource management agencies
 - Name Utah Conservation Commission as the coordination mechanism for policy and development of funding opportunities
 - Provide additional funding for Grazing Improvement Program (GIP), watershed improvements and the use of conservation easements on critical range parcels within a large grazing management unit
 - Promote use of Governor's Office of Planning and Budget (GOPB) rural planning tool and support County and Association of Governments (AOG) planning efforts
- Improve infrastructure (cost-effective on a large scale)
 - Landscape scale management plans—where feasible, combine allotments to achieve flexibility, balance, and economies of scale
 - Fund watering facilities, fencing, vegetative improvements and weed control, based on landscape scale plans
- Balance Grazers and Browsers
 - Increase mule deer and sheep numbers to achieve balance
 - Increase funding and effectiveness of predator control
 - Provide reasonable and sufficient compensation for wildlife impacts to agricultural producers
- Promote Utah's livestock industry
 - Increase capacity of local processing facilities, including cull cow processing
 - Inquire: do we have sufficient capacity to help?

OUTCOMES:

Outcomes related rangeland improvement include healthy landscapes and watersheds, increased vegetative cover that can be used as a feed source for livestock and wildlife, and more effective control of noxious and invasive weeds, which will lead to increased economic sustainability of the livestock industry and of sustainability of Utah's landscapes.

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Immigration

Goal: Help provide Utah farms and ranches with an ample, sustainable, and legal workforce

STRATEGIES:

- Understand the E-verification is unacceptable until immigration laws have been resolved
- Support HB 116 for a guest worker program
- Identify and influence national legislator(s) to draft comprehensive national legislation for a guest worker program

ACTIONS/TASKS:

- Revise State legislation:
 - Research elements and language for guest worker legislation
 - Draft any additional clarifying legislation
 - Solicit support
 - Introduce legislation/go through the legislative process
- Influence federal legislation
 - Promote guest worker legislation through federal legislators and lobbyists

OUTCOMES:

Outcomes related to immigration include an adequate and stable workforce to support agricultural labor in Utah.

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Urban Agriculture

Goal: Increase urban agriculture presence and sustainability in Utah

STRATEGIES:

- Provide additional urban agriculture opportunities
- Improve urban agriculture marketing opportunities
- Provide agribusiness start-up assistance
- Promote conservation district leadership

ACTIONS/TASKS:

- Provide additional urban agriculture opportunities
 - Work with local government to create or improve urban and backyard agriculture-friendly zoning ordinances
 - Encourage vacant local government and state land in urban areas to be used as small plot agriculture areas (Salt Lake County urban farming example)
- Improve marketing opportunities
 - Provide funding and support to local farmers markets and farm stands to increase capacity, advertising, etc.
 - Promote and support farm and ranch community supported agriculture (CSA) programs
 - Provide leadership and financial assistance to promote and manage community supported agriculture and farmers' markets
- Fund agri-business start up assistance
 - Fund a specialist at UDAF to help new agriculture operations navigate through licensing and food safety requirements and educate start-up businesses about networking and marketing opportunities
 - Provide funding support for small scale agri-business
- Empower conservation districts to provide leadership
 - Preserve current urban agriculture
 - Create new section of code to reduce/augment greenbelt acreage rules (support further consideration of this idea)

OUTCOMES:

Outcomes related to urban include providing farming and land use opportunities, increased local marketing opportunities to Utah agricultural operations, and supporting urban agriculture and agribusiness start-up.

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Agriculture Promotion and Profitability

Goal: Promote Utah farms and ranches, and provide business opportunities that will increase agricultural operation profits and sustainability

STRATEGIES:

- Improve local processing capacity
- Improve distribution capacity
- Increase capacity for *Utah's Own* and other local food marketing
- Promote innovative agriculture practices and products

ACTIONS/TASKS:

- Increase processing capacity
 - Support more processing facilities in all sectors of agriculture
 - Fund development of incubator kitchens throughout Utah (one per county) and contract with existing facilities
 - Provide support for small-scale agricultural processing start-up businesses
- Improve distribution capacity
 - Provide incentives for local stores to buy and advertise local first
 - Create incentives and/or legislation to encourage school lunch programs, state agencies and other public sector services to buy Utah products first (when available)
 - Create or fund combined central distribution points for the purchase of local Utah agricultural products
- Increase support for *Utah's Own* marketing
 - Provide funding to *Utah's Own*, farmers' markets, etc., to increase promotion of Utah agricultural products
 - Increase support for Utah product labeling (truth in advertising)
 - Work with the Governors' Office of Economic Development to promote new agriculture businesses
 - Promote innovative agriculture practices and products
 - Foster partnerships with food buying groups, restaurant groups, emerging businesses

OUTCOMES:

Outcomes related to Utah agriculture promotion and profitability include providing increased local marketing opportunities to Utah agricultural operations and supporting increased opportunities for smaller agricultural operations and food businesses to be more profitable and more sustainable.

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Next Generation Farms (young farmers)

Goal: Help provide Utah farms and ranches with options for sustainable generational farm transfer

STRATEGIES:

- Provide business planning and farm transfer support
- Support new and existing group retirement and insurance programs for farmers and ranchers
- Support extension with these programs

ACTION ITEMS:

- Support business planning/transfer
 - Work with attorneys, accountants, land appraisers and others to put together templates and other free resources to help exiting and entering farmers and ranchers start to develop business plans, transfer plans and business restructuring plans
 - Call to action: colleges from Utah, USU Extension Service, the Farm Bureau, and other farm and ranch support groups should provide additional educational opportunities to farmers and ranchers about transfer models, qualified experts, and other resources available to assist in transfer planning
 - Help exiting farmers who have not identified a successor to locate young farmers and ranchers looking to acquire an operation
 - Continue support of low-cost financing options through state and federal loan assistance programs such as the Utah Agriculture Resource Development Loan (ARDL) program and the Natural Resource Conservation Service (NRCS) new farmer-assistance programs
 - Work with financial community (banking institutions, etc.) to promote financing
- Enhance retirement and insurance programs
 - Support new and existing group insurance and retirement programs for agricultural producers and their families
- Support extension with these programs (UDAF and farm organizations)

OUTCOMES:

Expected outcomes related to next generation farms and farm transfer include providing infrastructure and support to those retiring farmers and ranchers who want to transfer their operation to someone who will keep the land in agricultural production, and supporting group retirement and insurance funds that will help retiring agricultural producers pay for retirement.

Appendix II: Issues (strategies, actions/tasks, and outcomes)

Issue: Irrigation Infrastructure

Goal: To improve water distribution systems, which include canals; deliver water to irrigable farm lands in a cost-effective manner; and improve and maintain these systems for both sustainable agriculture and projected population growth

STRATEGIES:

- Provide educational programs to focus on the issue
- Map current canal systems – state wide
- Enhance legislative support for ‘on-going’ funding to support irrigation infrastructure
- Persuade Congress to support Farm Bill programs that support irrigation infrastructure
- Develop new methods to allow secondary systems of agricultural waters to be used for residential uses

ACTION ITEMS:

- Provide educational programs
 - Implement a public relations program to the general public about the irrigation needs of agriculture and the benefits of well-maintained irrigation water delivery systems to the general public
- Map canal systems
 - Fund statewide canal mapping initiative
- Enhance legislative support and funding
 - Augment existing funding or develop alternative funding sources for expanded use, or development and replacement of, updated and upgraded technological irrigational systems
 - Incentives for increased efficiencies by agricultural producers
- Persuade Congress to provide support
 - Identify and influence Congressional delegation members to support agricultural legislation to improve water infrastructure
 - Urge congressional support of the Natural Resource Conservation Service (NRCS), National Association of Conservation Districts (NACD), etc. to expand programs for irrigational systems and increase the efficiency of those systems

OUTCOMES:

Outcomes related to irrigation infrastructure include increased efficiency of water resources, increased safety for the general public, effective use of technologies to support sustainable agriculture, and irrigation systems which can be passed onto future generations.

Appendix III: Bibliography

Sources:

Ag Classroom. *A Look at Utah Agriculture*. Retrieved from <http://www.agclassroom.org/kids/stats/utah.pdf>

Agricultural land converted to developed land. Retrieved from http://www.farmlandinfo.org/agricultural_statistics/index.cfm?function=statistics_view&stateID=UT

Banner, Roger E., Baldwin, Ben D. , Leydsman McGinty, Ellie I. *Rangeland Resources*, Utah State University Cooperative Extension Service, 2009. Retrieved from: http://extension.usu.edu/utahrangelands/files/uploads/RRU_Introduction_TOC.pdf

Carr, Gene. *Utah Planner*, Volume 37 Number 10, October, 2010

Envision Utah Study *Utah Values & Future Growth*, November 2007 Prepared by Harris Interactive

Figure 11 Map source: http://www.urbandesignlab.columbia.edu/?pid=national_foodsheds

Galli, Craig D., *Building Zion: The Latter-day Saint Legacy of Urban Planning*” *BYU Studies* 44, No 1. (2005). Retrieved from <http://byustudies.byu.edu/PDFLibrary/44.1GalliBuilding-3f800610-43e7-467e-b626-3beb03472d25.pdf>

Godfrey, Bruce E., – *Livestock Grazing in Utah: History and Status* (November 2008). Retrieved from <http://byustudies.byu.edu/PDFLibrary/44.1GalliBuilding-3f800610-43e7-467e-b626-3beb03472d25.pdf>

Governor’s Office of Planning and Budget, *Agriculture Sustainability Task Force Survey* (2011).

Governor’s Office of Planning and Budget, *State of Utah Baseline Report* (October 2008)

History of Urban Agriculture. Retrieved from <http://sidewalksprouts.wordpress.com/history/>

Huball, Mary Ann, Cache Valley Gardeners Market statistics. E-mail to Evan Curtis, September 22, 2011

Lubowski , Ruben N., Marlow Vesterby, Shawn Bucholtz, Alba Baez, and Michael J. Roberts, *Major Uses of Land in the United States, 2002 Economic Information Bulletin No. (EIB-14) 54 pp* (May 2006). Retrieved from <http://www.ers.usda.gov/Publications/EIB14/>

Merlo, C. (2011). *Alfalfa Hay Prices Soar*. AGWeb, March 12, 2011. Retrieved from http://www.agweb.com/article/alfalfa_hay_prices_soar/

Murphy, Mirriam B., *Sheep Fueled 1920s Economy*, *History Blazer* (July 1996). (published at Utah History to Go).

National Alfalfa & Forage Alliance (NAFA). *Coexistence for Alfalfa Hay Export Markets*, June 2008. Retrieved from <http://www.alfalfa.org/pdf/CSExportHay.pdf>

Nelson, Arthur , presentation, Fall Conference 2010 APA UT Chapter

Appendix III: Bibliography...Continued

Olsen, Shawn, *Attendance at USU's Botanical Center Farmer's Market*. , e-mail to Evan Curtis, September 21, 2011.

Schwartz, Judith D., *Buying Local: How It Boosts the Economy*, *Time Magazine* (June, 2009). Retrieved from <http://www.time.com/time/business/article/0,8599,1903632,00.html#ixzz1JHA3WypM>

Smith, Joseph. *Explanation of the Plat of the City of Zion* (Circa June, 1833). Retrieved from <http://josephsmithpapers.org/paperSummary/explanation-of-the-plat-of-the-city-of-zion-circa-25-june-1833#3>

Spangler, Jerry "Farmers and Activists Share Fear: Loss of Land," *Deseret News*, April 22, 1998.

Stewart, Hayden, *How Low Has the Farm Share of Retail Food Prices Really Fallen?* Economic Research Report Number 24 (August 2006). Retrieved from <http://www.ers.usda.gov/publications/err24/err24.pdf>

USDA Agricultural Statistics, 2010

US Dept of Agriculture, *Farmers Market Growth: 1994-2011* (August 2011). Retrieved from <http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateS&leftNav=WholesaleandFarmersMarkets&page=WFMFarmersMarketGrowth&description=Farmers%20Market%20Growth&acct=frmdirmkt>

Utah History Encyclopedia. Retrieved from <http://www.media.utah.edu/UHE/f/FRUIT.html>

USU Extension. *Agricultural Hard Times & The Great Depression, 1920-1930* (2011). USU Extension Agriculture in the Classroom. Retrieved from <http://www.agclassroom.org/ut>



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