

YOUTH AND THE MOUNTAINS

Student Papers on Sustainable Mountain Development



Volume III
2015

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801-863-8415

Published: March 1, 2017

Printed by Utah Valley University Press

800 University Parkway

MS 187

Orem, Utah 84058

USA



YOUTH AND THE MOUNTAINS

Student Articles on Sustainable Mountain Development

Youth and the Mountains is a journal composed of student articles on sustainable mountain development. The journal is supported by the Department of History and Political Science, in the College of Humanities and Social Sciences, as well as the President's office at Utah Valley University (UVU). The Journal is an undergraduate publication with the aim of providing a forum for undergraduate students to share research and encourage active pursuit of quality academic scholarship. Students who have questions about the Journal, or those wishing to make a contribution (IE: filling staff positions or submitting a manuscript for review), should contact the Editor-in-Chief, David Connelly by e-mail at: YouthMT@uvu.edu with the subject line of JOURNAL SUBMISSION. If you would like to see previous issues go to: <http://www.uvu.edu/hps/student/youthjournal.html>

TABLE OF CONTENTS

Introduction	
Dr. David R. Connelly.....	1

SECTION I OFFICIAL DOCUMENTS

Women of the Mountain Conference	
Final Document.....	5
Utah Valley University Submission to the United Secretary General's Report on Sustainable Mountain Development 2014-2015.....	12
"Water Waste"	
By: Dee Anderson.....	14
"200 Years too Late for the Family Farmer: The Struggles of Today's Agriculturalists"	
By: Kiersten Dumas.....	22
"The Lake Powell Pipeline Project"	
By: Justin Wall.....	30
"Women of the Rocky Mountains: Days for Girls"	
By: Sadie Conover.....	41
"Community Based Living and its Applicability to the World Today: Case Study of the Mormon Pioneers"	
By: Darian Hackney.....	50
"From United Nations to the Inter-Mountain West: How Mandated Parental Accountability Could Increase Sustainable Nurturing and Sustainable Living"	
By: Megan Raines.....	58

SECTION III: INTERNATIONAL MOUNTAIN ISSUES

"Rebuilding Shree Shakti Primary School: Amarai-4, Gorkha Nepal"	
By: Sagar Basnet.....	68

“Flying Tiger Angels-US Aviation Aid to China During the 2nd Sino-Japan War”
By: Tyler Riffle.....79

SECTION IV
HIGH SCHOOL ESSAY CONTEST WINNERS 2015

1st Place Winner
“The Women of the Nuba Mountains”
By: Chayston Wood.....102

2nd Place Winner
“Women of the Mountains Sustainable Development”
By: Caroline Moss.....107

3rd Place Winner
“Women Involved in Developing Mountain Regions”
By: Melissa Hansen.....111

Honorable Mention
“Women in the Mountains, Past, Present, and Future”
By: Gabby Anderson.....116

INTRODUCTION

The 2015 calendar year was another year of new successes at Utah Valley University (UVU) in promoting the Sustainable Mountain Development (SMD) agenda of the United Nations. The Utah International Mountain Forum (UIMF), a coalition of student clubs at UVU, has once again redefined the definition of student engagement on a many levels by continuing its close cooperation with the Mountain Partnership (MP) under the Food and Agriculture Organization of the United Nations (FAO-UN). While students advocate the SMD agenda in general, it became apparent early on that gender and climate change issues would dominate the themes of this year's activities. The papers within *Youth and the Mountains* Volume III will give the reader a taste of the great efforts of UVU students to present a cross-section of the dynamic field of SMD advocacy from different perspectives.

The highlight of the year took place October 7-9, 2015, when the UIMF successfully hosted, for the first time through students' efforts, the 4th International Women of the Mountains Conference (WOMC) that was held at UVU. This was an event under the umbrella of the MP and it was featured in the 2015 Annual report of the MP on SMD. Therefore, the final document of the conference is included in this volume as a testament of the students' professionalism and dedication to the noble goal of engagement of North American mountain communities in promoting the sustainable development for mountain communities globally.

Another contribution to Volume III are the winning papers from the 2015 Utah High School Essay Contest, which is hosted by UVU students to promote different aspects of the SMD agenda. In 2015, it was dedicated to the gender issues as a contribution to the agenda of the WOMC. Articles written by high school students highlight our future scholars and leaders in SMD promotion in Utah and North America.

Utah Valley University has traditionally focused its mission on being a teaching institution that focuses on community engaged learning that is a model promoted by the Carnegie Endowment. It has been an amazing journey to watch our students rewrite this idea through expanding from a local community to gaining a global notoriety through their actions. To accomplish this, during the 2015 calendar year they tirelessly advocated for the adoption of mountain targets among the United Nations

Sustainable Development Goals (SDGs), as a way to concentrate their efforts towards sustainable development among mountain communities, both in the Rocky Mountain region and globally. Therefore, we also included a draft of the submission from UVU to the United Nations Secretary General's Report on SMD, which features the role of our students in hosting the WOMC and in SDG promotion among other things.

Our year began in February of 2015, when UVU hosted His Excellency Martin Sajdik, Permanent Representative (PR) of Austria to the United Nations and President of the Economic and Social Council of the United Nations (ECOSOC). This was an extraordinary experience for our students to talk and engage with such a high-level VIP guest, who had direct involvement in the adoption and implementation of the post-2015 development agenda of the United Nations. The President of ECOSOC was very impressed with the contribution of UVU students to SMD advocacy in the state of Utah and globally through their efforts to support the new SDGs, and how motivated they are to continue this work.

As part of the efforts to promote SMD targets and be included among the SDGs, UVU students hosted throughout the year several other UN PRs, including: His Excellency Zahir Tanin, PR of Afghanistan to the UN; His Excellency Kaha Imnadze, PR of Georgia to the UN; and His Excellency Peter Thomson, PR of Fiji to the UN, among many others. Several years ago, it was unimaginable to see any UVU student's presence among such high-level foreign dignitaries during lunches and specially arranged meetings. However, due to their professionalism and dedication to this work, it is now a customary part of a dignitary's visit to have students in attendance with them at all times.

The submission draft that was talked about earlier, also features our students' efforts in making sure that mountains were included in the COP21 climate talks in Paris, France in the later parts of the year. During 2015, UIMF members were able to help gather over 6,283 signatures which went far above the 5,000 that were necessary. This was a great effort that helped the Mountain Partnership and FAO recognize the power of a student led grassroots effort.

Furthermore, this volume also contains UVU student essays that touch on: water waste in the arid environment of Utah and Lake Powell; stories of NGOs working with women's hygiene

through a non-profit organization (Days for Girls) which began in Washington state but, has very close ties to Utah; certain aspects of the Utah model of SMD which began with the Mormon settlers; a report from a UIMF member about rebuilding his primary school in Nepal following the devastating earthquake in 2015; and finally several articles touching on the international applicability of SMD. As always, the editorial board was impressed with the resourcefulness of the students, and their dedication to professionalism. We are sure our readers will enjoy them just as much as we did.

The continuity of the third volume of the *Youth and the Mountains* journal is one more testament to our beliefs that through scholarship and academic debate, we can secure a sustainable future for upcoming generations in mountainous regions. The engaged learning model and civic engagement are a finely tuned cycle that depends on student action and dedication which propels them forward in successfully changing the world, one mountain peak at a time.

In our effort to expand the global cognizance in regards to mountain issues, we encourage students and scholars to submit papers related to sustainable mountain development and mountain issues for consideration in future volumes. Any comments and suggestions are greatly appreciated. Without further comment, the editorial board is pleased to present to our distinguished audience *Youth and the Mountains*, Volume III.

David R. Connelly, Editor-in-Chief



SECTION I

OFFICIAL DOCUMENTS

THE FINAL DOCUMENT OF THE FOURTH INTERNATIONAL WOMEN OF THE MOUNTAINS CONFERENCE

We, the participants of the Fourth International Women of the Mountains conference (WOMC), held October, 7-9, 2015 at Utah Valley University in Orem, Utah, under the auspices of the United Nations' Mountain Partnership (MP), within the framework of the decisions of the Orem Declaration of Mountain Women (2007), Thimphu Declaration of the Celebrating Mountain Women Conference (2002), and the follow-up on the decisions of the United Nations Sustainable Development Summit in New York on September 25-27, 2015 in conjunction with efforts to reach the mountain-related targets in the Post-2015 development agenda, declare that:

1. Women and families play a crucial role in sustainable mountain development (SMD). Goal 5 of the Sustainable Development Goals (SDGs) emphasizes the importance of "Achieving gender equality and empowering all women and girls." It can be provided through strong support of improving women's rights and welfare, including women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life. It is particularly important to ensure that these goals are reached.

2. Mountain communities and women play a key role in the protection of the environment and water sources. Successful implementation of Target 6.6 of SDG6 to "By 2030, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes" will require active joint efforts of governments and local mountain communities to use monitoring frameworks for specific ecosystems to ensure sustainability for their livelihoods. The traditional techniques and knowledge developed by mountain communities could prove invaluable in building resilience and adapting to climate change, and women play a vital role as custodians of traditions that help achieve these goals. Therefore, mountain women play a key role in adaptation to and mitigation of climate change and the overall protection of the environment and water sources.

3. Improvement of livelihoods in the mountain communities for women requires joint policies and actions to protect ecosystems.

Target 15.1 of SDG15 sets the goal to “By 2030, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.” Because mountains are of utmost importance for water, soil fertility, and other important downstream factors, it is necessary to encourage increased cooperation and coordination of work in the mountains in conjunction with downstream sustainability issues. Women upstream and downstream can play a very important role in these discussions and joint planning because they are promoters of innovation and development, and tend to cooperate for common benefits.

4. The transmission of family values, heritage, and culture is essential for sustainable mountain development. Traditions and culture are passed on through the inter-generational transfer of knowledge. Women of mountain societies, as mothers, play unique roles in encouraging families and children to coexist with the mountains and preserve their ecology. There is an urgent necessity to protect the local and indigenous values, traditions and cultures of mountain societies. It is also important to advocate for thorough research on them, as they contain both tangible and intangible sources of knowledge concerning sustainable development, in order to encourage humankind’s coexistence with nature. This cultural memory is crucial in achieving sustainable mountain development, and, therefore, the role of mothers must be protected.

5. Mountain communities and families should not continue to suffer from poverty. To attain this goal, it is important to implement target 15.4 from the UN SDGs: “By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.” It is necessary to ensure that development is sustainable and does not detract from rural ecosystems. Mountain communities, families, and indigenous populations in particular have the right to own, use, and develop the lands and resources based on their traditional ownership and to freely dispose of their natural wealth and resources based upon the principles of mutual benefit and international law. There is a direct link between women’s development and economic growth. Empowering adolescent girls through education can be one of the best antidotes to the poverty cycle. Furthermore, sustainable development must provide social and ecological benefits for populations residing in both the highlands and

lowlands. Capacity building of mountain women for livelihood generation, based on local resources, can help in supporting their families and communities.

6. Mountain women and their families in particular need to be protected from the violence of armed conflicts, trafficking of persons, and gender based violence. The number of armed conflicts has increased significantly in recent times, which exposes a weakness in the legal systems on all levels in addition to the lack of funds and to corruption. This has had a substantial impact on the lives of women and families in mountain areas. Human trafficking is currently the fastest growing black market industry of which sizable portions are women and children, especially in sex trafficking. Moreover, pornography and sex trafficking are intertwined in sexual exploitation. It is important that victims are not further victimized and resources for victims are made available. It is necessary to eliminate such gender based violence within these rural communities and affirm dedication to this goal from local, national, and international authorities to ensure equal access to justice for all.

7. Development of women's entrepreneurship through fair business practices should be encouraged. Women's entrepreneurship can be strengthened through the increasing role of women in expanding sustainable agriculture in mountains, like their work on MAP crops and introducing non- timber forest crops. Economic justice can be promoted by encouraging development of equal pay and equal access to training, micro-credit loans and other financial services. Also while a substantial portion of agriculture in rural and mountain regions is attributed to family farming and provides much needed jobs, it is necessary to promote programs that value local knowledge and are focused on strengthening food security, encouraging entrepreneurship, promoting small scale agribusiness, and building resiliency to mitigate climate change effects. Along with agriculture, tourism entrepreneurship is now becoming more important as a means of empowering mountain communities, especially women.

8. Sustainable mountain development requires the introduction of leadership roles for women and their active involvement in political and economic decision-making. It is urgent to engage more women in the discussion of policy development and promote inclusion of women in all political processes, decision-making, and protect their participation. Women must fulfill important roles in conflict resolution and crisis management.

This can be accomplished through working together with partner institutions, organizations and individuals to develop the next generation of leaders by providing them, women and girls, opportunities for networking and knowledge sharing necessary to prepare them to take part in the political/economic process.

9. Gender equality and equal rights for women and men should be advocated on all levels. It is necessary to promote an increase in the amount of available roles for women to fulfill in mountain regions. Women have to be provided much broader access to education, medical services, and the protection of their legal rights. Problems concerning mothers and child care still permeate local justice and health-care systems. Thus it is necessary to promote the implementation of programs, committed to raising awareness that mothers shape the nation and that the exploitation of women impacts the rest of the world.

10. It is necessary to protect the rights of women and children to have adequate access to healthcare, including reproductive and sexual healthcare. In many mountain regions across the world, there is a high infant/maternal mortality rate, so access healthcare for women and children is critical. Early detection and intervention are central in combatting many health disorders and growth monitoring can assist in defending against maladies caused by malnutrition among mountain families. Furthermore, increased access to education and funding directed at contraceptive and reproductive services is an imperative in combating health issues related to HIV/AIDS and other STD's, as well as empowering women to be able to better manage the needs of their family and community.

11. Alliances and networking among mountain women and youth have to be strengthened. Exchange of information, best practices, and fundraising opportunities among mountain women and communities play an important role in their sustainable development. Increased engagement of youth and students in an interactive community in particular will encourage successful achievement of mountain targets among the SDG's.

12. Education of women is essential for SDG implementation. There still exists in many modern nations a bias against women. This is especially true in rural and mountain communities where education is not readily available. Education is essential to overcoming gender inequalities and discrimination. So attention should be given to advanced educational programs including

vocational ones in conjunction with local teachers, staff, and women themselves to ensure improvement of the social well-being of mountain communities. This entails ensuring broad access to information regarding business, STEM fields, financial institutions, and other fields that promote the improvement of living conditions while conserving the biodiversity of the environment. Access to technology and the associated training is important for communities, especially women, in mountain regions to bridge the Digital Divide that separates them from their counterparts in lowlands in order to access global information outlets critical to their sustainable development as well as contribute their local knowledge and indigenous experiences to wider community. Education through the arts needs to be strengthened since there is a positive correlation between the arts and academic success, and arts have always been vital part of family/ mountain community life. To help achieve the UN's goal to eliminate gender disparities in education and ensure equal access to all levels of education and vocational training, it is important to ensure that these SDGS focused on women's benefits be equally addressed in mountains and lowlands.

13. The international community must address the impacts of climate change on sustainable economic development for rural and mountainous regions. As stated in the Agenda 21, Rio+20 outcome, and The Future We Want, mountain ecosystems are often fragile and easily damaged. Climate change is causing glacial melting which is changing water availability. Further, water scarcity, already a problem in many parts of the world, could worsen if action is not taken. This would threaten the livelihoods of mountain peoples and local communities even more. Moreover, the rapid melting of glaciers and deterioration of watersheds is reducing the supply of life-sustaining water and increasing the potential of conflict. It is important to mobilize support on the local, regional, and global levels to minimize the hardships these regions face as a result of climate changes. Sustained efforts will help in reducing the migration of families from mountain regions.

We, the participants of the Women of the Mountains Conference:

- Support the continued efforts of Utah Valley University (UVU) and the International University of Kyrgyzstan (IUK) to convene regularly for the International Women of the Mountains conference (IWOMC) as a forum to advocate both gender and SMD agenda.

das of the United Nations in North America, and to strengthen partnership between the local people with global mountain communities, in Central Asia in particular. In addition, it helps to create more incentives among local communities in North America for increased private and public funding of the mountains and the maintenance of the ecosystem both in the region and globally;

- Acknowledge that Mountain Partnership members in North America have continued contribution to the hosting of the IWOMC in Utah and overseas which allows them to develop regional approaches in SMD advocacy, both in North America and globally;

- Highlight important experiences in gender and SMD advocacy at UVU, an undergraduate university with a focus on teaching and ‘engaged learning’ rather than research. UVU has been able to successfully involve its students in raising awareness among local communities of different gender and SMD issues, to provide them with important professional experiences and skills, and networking opportunities on all levels, especially internationally;

- Acknowledge the important role played by the Utah International Mountain Forum (UIMF), a coalition of student clubs at UVU, and by local communities from the state of Utah in the successful hosting of the conference as a major grass-roots regional gathering, advocating the gender agenda of the United Nations in addition to contributing to such initiatives as the global social-media campaign to “Keep Mountains in SDGs,” and petition signing to ensure that the impact of climate change on Mountain Peoples and Ecosystems is fully addressed in the UNFCCC COP21 new climate deal.

We recommend:

1. To support UVU’s efforts to involve other interested institutions in the state of Utah to jointly host the IWOMC biennially with alternating sites between State of Utah and mountain nations from around the world;

2. To support efforts of Brigham Young University’s WomanStat project to expand their research areas on different aspects of women’s life around the world by focusing on mountain families and communities in particular, in order to develop adaptation measures, investments, and specific policies reflecting emerging challenges to the modern mountain communities;

3. To support efforts of Tatra Mountain Cultural Foundation in promotion of mountain cultures through research and documentation with an ultimate goal of creating special institution for that purpose;
4. To support Mountain Partnership members in North America efforts in promoting regional approaches in gender and SMD advocacy in addition to hosting WOMC: to commemorate jointly and with MP members from the rest of the world the International Mountain Day on December 11 in order to raise an awareness of the different aspects of the SMD agenda among local communities. The partnership between MP members in North America and Central Asia needs to be expanded to other parts of the global mountain communities and strengthened through expansion of such projects as traditional handicrafts sales from Central Asia in North America by Vista 360 from Jackson, WY and educational programs between UVU and IUK among others;
5. To follow up on the results of the business fair during the International Women of the Mountains Conference when potential partnerships were created between local companies in Utah and female entrepreneurs from Peru (agriculture), Kyrgyzstan, Kazakhstan and Nepal (tourism), and Indonesia (renewable energy);
6. To encourage new memberships in the Mountain Partnership and among educational institutions in particular as a foundations to nurture future leaders in SMD advocacy both in North America and globally. It is equally important to involve youth and high school students in gender and SMD promotion as well as to create joint initiatives with youth involvement from different regions, as was envisioned by the UVU and the Mountain Institute;
7. To encourage students from other educational institutions and local community representatives in the State of Utah to collaborate with or join the Utah International Mountain Forum as an informal institution which will coordinate and report to the MPS on a biannual basis on the accomplished actions and initiatives with focus on gender and the SMD issues of the United Nations on local, regional, and global levels.

December 1, 2015; Orem, Utah

UTAH VALLEY UNIVERSITY SUBMISSION TO THE UNITED SECRETARY GENERAL

SUBMISSION FROM UTAH VALLEY UNIVERSITY TO THE 2016 UNITED NATIONS SECRETARY GENERAL'S REPORT ON SUSTAINABLE MOUNTAIN DEVELOPMENT

Utah Valley University (UVU) from Orem, Utah has integrated the sustainable mountain development (SMD) advocacy into its curricula, based on the Carnegie Corporation Engaged Learning model. As a result, the Utah International Mountain Forum (UIMF), a coalition of UVU student clubs advocated including mountain indicators among sustainable development goals (SDGs) during the UN Open Working Groups on SDGs, as well as hosted ambassadors of mountainous nations to the UN. UVU students also contributed to a global campaign to include mountain issues in the agenda of the UNFCCC COP21.

Regionally, the UIMF successfully hosted the *Fourth International Women of the Mountains Conference* at UVU October 7-9, 2015, as a major gathering of the Mountain Partnership (MP) to advocate for SDG#5 "Gender and Equality," and SMD in North America and globally. As conference hosts, UIMF was joined by students from the University of Utah and Brigham Young University, along with MP members such as, the International University of Kyrgyzstan, the Mountain Institute, Vertex, the American Councils for International Education, City of Orem, Gruppman International Music Institute, Tatra Mountain Cultural Foundation, and Vista 360. Locally, students advocated SMD through hosting an annual High School Student Essay Contests and the International Mountain Day commemorations.

SECTION II

MOUNTAIN ISSUES IN UTAH AND NORTH AMERICA

WATER WASTE

By: Dee Andersen

Currently, Dee Andersen is a student at Utah Valley University studying Political Science and minoring in Constitutional Studies. After graduating from Canyon View High School, Andersen got a job working for Cedar City's Water Department. He moved to Orem in 2010 and worked for Wal-Mart, BlendTec, Orem City's Water Supply, and is currently working for Wasatch Minerals in Lehi.

Water is essential for life. The state of California in the United States knows that water can be a very controversial issue in deciding if it's better to regulate municipal water or irrigation usage. In California agriculture uses 80 percent of all their water. The agriculture industry so far, does not have restrictions on using groundwater. In a *New York Times* article the authors claim, "The State says it has no immediate plans to impose them. Officials say that groundwater reserves are meant to be a resource in a drought."¹ However, the Governor wants to put regulations on municipal use water, which will effect businesses and residential water use. This means the government can regulate how long an individual can take a shower, if they can water their landscaping, or if they can wash their car. And the government will also decide what businesses will be regulated as well as how much water they can use. Through looking at California's problem, it shows us how important the water issue is both in the United States and beyond its borders.

California's water usage is the perfect example for how water is being wasted and the heavy regulations the government imposes on municipal usage. California is considered to be one of the better living areas in the country because, of the weather, entertainment, and job opportunities. Because of its continued growth it's in a tight spot for water. The article, "California Drought Tests History of Endless Growth" talks about how California a once popular destination for living is now in question because of the drought occurring there.² Governor Jerry Brown is now forcing a 25 percent cut in water use for the people of Cal-

¹Editorial Board. "Watering California's Farms." *New York Times*, April 4, 2015. http://www.nytimes.com/2015/04/05/opinion/sunday/watering-california-farms.html?_r=0.

²Nagourney, Adam, Jack Healy, and Nelson D. Schwartz. "California Drought Tests History of Endless Growth." *New York Times*, April 4, 2015. <http://www.nytimes.com/2015/04/05/us/california-drought-tests-history-of-endless-growth.html>.

ifornia.³ A problem that is occurring in California is that Governor Brown isn't building any dams to reserve water. The water they do have is being dumped into rivers, so California can save some endangered non-native fish. The article written by Greg Corombos claims, "The congressman [Tom McClintock] is working feverishly to pass House Resolution 1668, the Save Our Water Act. The bill would put an end to releasing massive amounts of water during a time of drought."⁴ California needs to consider setting aside some regulations and put the water where it needs to be distributed, to the people as well as looking into building more dams to reserve more water.

With water usage being limited this makes living in California less attractive. For example, who wants to be forced to shower for only five minutes? In Palm Springs, California the city is willing to pay people to remove their grass and replace it with rocks and desert plants. Adam Nagourney et al. writes, "The drought is now forcing change in a place that long identified itself as America's desert Oasis."⁵

There are many countries around the world that are facing a water drought like in California, one such country is Australia. The ongoing drought in Australia was written about by authors Anna Hurlimann and Sara Dolnicar. They wrote:

in 2009 the water storage levels in dams around Melbourne, home over four million people, dropped below 30%. As a consequence, in many locations across Australia, water restrictions were imposed, and projects for wastewater recycling and seawater desalination were planned and/or implemented.⁶

It got so bad in Australia, some places like Euroa located in Victoria ran out of water completely, and the city had trucks haul water into town.

The research done by Hurlimann and Dolnicar found the public "being informed about water issues has been shown to be associated with some increase in the levels of beneficial water behaviors and attitudes."⁷ With this finding they began to research the best method for passing information to the public.

³Ibid.

⁴Corombos, Greg. "Bone-dry California Dumps Water to 'Make Fish Happy.'" *World Net Daily*, April 11, 2015. <http://www.wnd.com/2015/04/bone-dry-california-dumps-water-to-make-fish-happy/>.

⁵Nagourney.

⁶Hurlimann, Anna and Sara Dolnicar. "Newspaper Coverage on Water Issues in Australia." *Water Research* 46,19 (2012): 6497-6507. <http://ro.uow.edu.au/commpapers/3166/>.

⁷Ibid., 3.

They studied the effects of mass media outlets such as, newspapers, radio, and news shows. After analyzing different studies they found, “there is more opportunity for media attention and impact on public opinion for issues that involve dramatic events that are domestically relevant.”⁸

The media has had a similar effect on California residents, with the drought personally effecting people and the news reporting about it. The media has a vast amount of influence on people if they provide accurate information. If they are a trusted news source, the media can help with water conservation.⁹

California and Australia have huge restrictions on water use. In an article written for the *Journal of Economic Behavior & Organization*, the authors Castledine et al. analyze strict watering policies where people were allowed to water on certain days and if this process worked in conserving water. The article “Free to Choose: Promoting conservation by Relaxing Outdoor Water Restrictions” looked at the Reno/Sparks, Nevada water system and comment that “customers who adhere to the prescribed schedule use more water than those following a more flexible irrigation pattern.”¹⁰ In the article mentioned above a graph was provided to show states and a break down of cities that have water restrictions in the United States.

The graph shows several states that have restricted days, the hours when they can water and the time limit. Nevada has shown it is better to not have a strict policy. Castledine et al. strongly urge “policy-makers, our results suggest that adjusting existing Outdoor Water Restrictions to allow for flexible watering patterns could produce substantial water savings at relatively low implementation costs.”¹¹ Neighborhoods can influence people to become aware of their water usage and this will promote water conservation and be more beneficial than handing out fines.

Around the world agriculture uses a massive amount of water. The article written by Arnaud Reynaud et al. claims, “the balance between food supply and demand depends heavily on

⁸Ibid.,12.

⁹Hurlimann, Anna and Sara Dolnicar. “Newspaper Coverage on Water Issues in Australia.” *Water Research* 46,19 (2012): 6497-6507. <http://ro.uow.edu.au/commpapers/3166/>.

¹⁰Castledine, A, K. Moelther, M.K. Price, S. Stoddard. “Free to Choose: Promoting Conservation by Relaxing Outdoor Water Restrictions.” *Journal of Economic Behavior & Organization* 107 (2014): 324-343.

¹¹Ibid.

irrigated agriculture.”¹² Most agriculture industries rely on rainfall or snow-pack in order to get their water. In France, two instruments are widely used to control the use of irrigation water: water quotas and pricing. This system is a little bit different than the United States and Australian systems. Water markets do not exist in this country because water, *res communis*, belongs to nobody in particular and therefore cannot be sold. In France if customers want access to water they have to get authorization.¹³

Access is not considered a right to ownership of water and can be restricted in the case of a drought. The restriction of water use may take several forms. Such as, a partial restriction with a ban every other day for agricultural purposes. In France the farmers have to pre-pay for their water and the water pricing can get complicated. One system is CAGG and the other one is CADES pricing system. Both systems were able to deal with a drought season and prove to be useful tools in mitigating the impact of drought. This study mentioned above provides useful lessons for the design of water management policies.¹⁴ Agriculture in France uses 80 percent of the water usage and in Utah there is a similar usage of irrigation water.

Utah is a dry state and over the years it has had issues with drought. Depending on the extent of the drought, Utahans sometimes have to find ways to conserve their water. Utah’s water law provides that the water of the state belongs to the public, and the state determines who has a right to use water and regulates that use.¹⁵ Utah is known throughout the nation as a state that wastes water. It uses about 40 percent more water per person than its surrounding neighboring states like, Arizona, Colorado, and New Mexico.¹⁶ Governor Herbert is trying to set out a plan for 50 years to make sure Utah will be able to provide the necessary means to distribute water in knowing the population will increase.

Utah needs to look at future population growth and get seri-

¹²Reynaud, Arnaud, Yoro Sidibe, Jean-Phillippe Terreaux, and Mabel Tidball. “Coping with Drought with Innovative Pricing Systems: The Case of Two Irrigation Water Management Companies in France.” *Agricultural Economics* 43 no. 1 (2012): 141-155, doi: 10.1111/j.1574-0862.2012.00628.x.

¹³Ibid.

¹⁴Ibid.

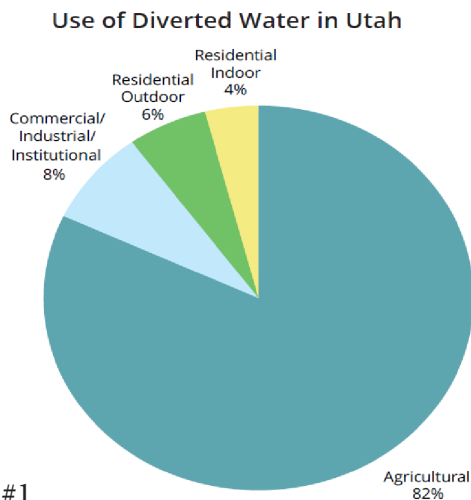
¹⁵Utah Legislature. Office of Legislative Research and General Counsel. “How Utah Water Works.” <https://le.utah.gov/interim/2012/pdf/00002706.pdf>.

¹⁶Schuske, Kim. “Our Water, Our Future.” *Science and Society*, November 7, 2013.

ous about the amount of water that is being wasted. The population growth that is predicted for the next 35 years will be around 2.5 million more people, living in Utah. Water management is how to conserve water. The Utah Foundation has “six recommendations for policy strategies or further study in the fields of rate structure, local response, and planning.”¹⁷

An area to analyze is the amount of water being wasted in agricultural and residential use. On graph #1 that’s from the Utah Foundation shows the percentages of “Use of Diverted Water in Utah,” which could be considered as irrigation water. Comparing how much diverted water is used by agricultural irrigation to residential outdoor and indoor use, shows that agriculture’s use is around 80 percent and residential (indoor/outdoor) use is around 10 percent. The report shows that “approximately [60] percent of residential use goes toward outdoor uses,” such as, maintaining lush landscaping.¹⁸

In Texas, they have a system to help lower irrigation usage by only allowing it to be used 5 days out of the week.¹⁹ If Utah were to apply a similar system as Texas, they could also reduce water usage in their irrigation system.



Graph #1

¹⁷Utah Foundation. “Flowing Towards 2050: Utah’s Water Outlook.” September 17, 2014. <http://www.utahfoundation.org/reports/flowing-toward-2050-utahs-water-outlook/>.

¹⁸Ibid.

¹⁹Gregg, Tony T., Dan Strub, and Drema Gross. “Water Efficiency in Austin, Texas 1983-2005: An Historical Perspective.” *Journal of American Water Works Association*, 99 no. 2 (2007):76-86.

All the water consumption in Utah averages out at 265 gallons per capita daily (gpcd), which is the second highest in the nation, just behind Nevada.²⁰ Utah made a goal to reduce the gpcd consumption from 265 gpcd down to 221 gpcd by 2025, which would be a 25 percent reduction. There is one city in Utah that has already achieved that goal. In 1997, Cedar City, Utah had an average 261 gpcd and by 2007 it dropped to 229 gpcd.²¹ One might question how they did this. Cedar City's plan consisted of the following three programs:

1. System Water Audits and Leak Detections
2. Public Information
3. Non-Promotional Pricing

The water conservation recommendations were developed through evaluating water savings and cost-effectiveness of typical conservation and Best Management Practices.²² The report done by the Utah Foundation shows:

indoor use at 60 gallons per capita daily (gpcd) and outdoor water use at 134 gpcd. In many areas of the state, secondary water systems are employed for outdoor residential water use. Secondary water systems are non-potable, generally unmetered, and are used for irrigation of lawns and gar dens.²³

Utah needs to look at the secondary system that is in place. The outdoor system uses a secondary system that only “pays a flat fee for an allocation of untreated irrigation water based on parcel size.”²⁴ This system does not have a meter in place so there is no way to tell how much water the irrigation system uses, thus causing the water consumption to go up. By putting meters in the secondary systems, it would make people aware of how much water they are actually consuming and hopefully will cause users to reduce water consumption.

Another reason for the amount of water wasted in Utah is due to low water rates, which are some of the lowest in America. Low rates mean higher consumption, especially when people need to have green grass. It's also easy to over-water when rates are so low. Property taxes and the fact that the water is gravity fed,

²⁰Ibid.

²¹Brown and Caldwell. “Water System Master Plan Update for Cedar City, Utah.” Cedar City, June 2009. <http://www.cedarcity.org/DocumentCenter/Home/View/724>.

²²Ibid.

²³Utah Foundation.

²⁴Ibid.

are some of the main reasons why water rates are so low.²⁵ In the report “Cost of Water in Utah” shows data collected by the Utah Division of Drinking Water. They report that the average rate of 1,000 gallons of water in Utah is \$1.34, which is 45 percent below the compared average of western states.²⁶

Utah’s climate has a huge impact on the water rates, with the snow-pack usually accumulating around 16 inches and dropping down to 4-7 inches in the summer months. The Wasatch Mountains receive 40-50 inches of snow-pack, which acts like water storage until the snow begins to melt in May and June. The spring melt in the mountains east of Federal highway I-15 starts filling the surrounding reservoirs and lakes, with a lot of the water going into the ground and entering into the water aquifer. Water then goes into the springs where it is pumped from the spring to the communities that are close to the mountains.²⁷ It doesn’t cost hardly any money to treat water coming from these springs, and this makes water rates more affordable.

According to the Energy Information Administration, Utah is 4th for the least energy costs of delivering water to the consumer in 2007, due to the natural use of gravity.²⁸ The snow-pack that is used as storage is considered clean because it has not been polluted yet. And, with no pollution there is minimal need for water treatment. With the snow melt filling reservoirs, lakes, and spilling into springs, this makes the cost of water extremely low. With low water rates the amount of water being wasted goes up, due to limited penalties for using additional water. Graph #2 also from the Utah Foundation shows different cities that use a block rate structure for water rates. One can see they start with a base rate and the price increases when using more than 10,000 gallons.²⁹

Looking at residential rates in St. George, Utah they have free water usage until consumers use roughly around 5,000 gallons of water. To compare other cities in Utah with Tuscon, Azorina, Utahans don’t have a block structure. If Utah can implement a better system, it will cause people to be more aware of the water they are wasting. This will help Utah reach its’ goal to

²⁵Utah Division of Water Resources. “The Cost of Water in Utah.” Seven Canyons Trust, October 27, 2010. https://static1.square-space.com/static/530e3f55e4b088e83bb95f08/t/5621454de4b-0501d406121c2/1445021005067/DNR_CostofWater.pdf.

²⁶ Ibid.

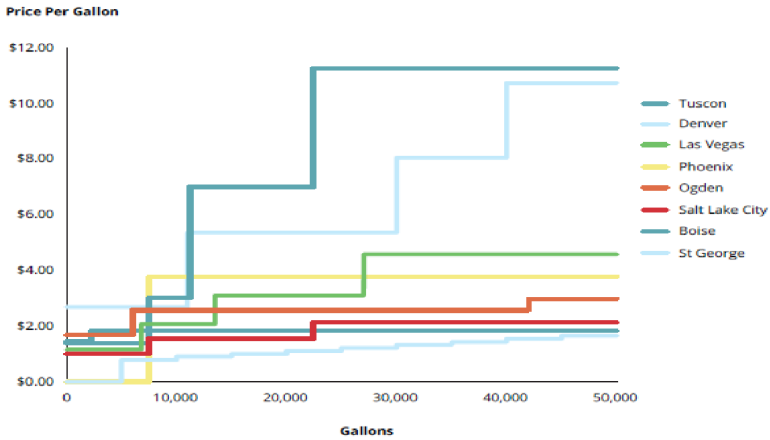
²⁷ Ibid.

²⁸Utah Division of Water Resources.

²⁹Utah Foundation.

reduce 25 percent of water wasted by 2025.

Graph #2



Source: City Water Departments, Summer Residential Rates for Single-Family Homes.

Note: These rates are in addition to any base rate charged by the water district. Several water districts, such as St. George and Phoenix, include an allocation with their base fee – with changes noted at the first rate tier.

Since water is an essential part of life it needs to be looked at very carefully. It's important to find the best approach for conserving water. Educating communities about water conservation will allow people to be aware of the water they are wasting. Having block structure pricing for outdoor water use is a better approach to conservation instead of using restriction methods. Utah is a unique area for water, and low water rates is a great thing for the consumer. However, people need to be vigilant about the amount of water they consume year to year. Relying on the snowfall for the water supply can be risky because, one year there is enough snow fall and then the next couple of years there could be a drought. Local communities need to learn to adapt to conserving water and implementing better systems, such as, putting in meters for the secondary system. Utah can also try new ways of reducing the amount of water agricultural uses or find a better way to track the amount of water that is used. Like in France, Utah could adapt a pre-pay water structure, so farmers have a pre-determined amount of water they want to use. By doing this, farmers would be more efficient with their water usage each year.

200 YEARS TOO LATE FOR THE FAMILY FARMER: THE STRUGGLES OF TODAY'S AGRICULTURALISTS

By: Kiersten Dumas

Kiersten Dumas graduated from Salem Hills High School in May 2012, and has been attending Utah Valley University (UVU) ever since. She is leaning towards majoring in U.S. History and Political Science to become a high school teacher, but is still deciding. She is excited to be a part of the Utah International Mountain Forum and Sustainable Mountain Development clubs at UVU and is looking forward to the many opportunities and activities that lie ahead. She has lived in Utah her entire life and has spent the last ten years living on a farm in Payson, Utah with her family. Her love for animals makes farm life that much better for her. She has learned countless lessons about animal health, gardening, farm equipment, and continues to learn more and more every day.

Because there are more people living in the world than any other time in history, the consumption of food, clothing and housing products is at an all-time high. "Abundant crops and a surfeit of inexpensive food. Surely, one might say, that is an American farming success story. But success is a subtle coy mistress, and easily panders to selective viewing. Farming 'success,' whether on a local or national scale, has many sides, many implications, many forms, many obscure costs, and many definitions."¹ The United Nations General Assembly declared 2015 the International Year of Family Farming. In some areas of the world, up to 70 percent of their agriculture depends upon these same family farms.

How is it possible that modern people are living in a time where there is the highest demand for food ever, but there are very few farmers? What are the struggles of family farmers? Why are they disappearing? What is the fate of food production in the United States and in particular, the State of Utah? This essay will bring light to these struggles in hopes that we, as a community, a state and a nation, can save the family farmers.

Comparing the number of farmers there were 100 years ago in the United States to today is very shocking. It raises the question, how we are able to sustain our population at all? "The exodus of Americans from farming is one of the most dramatic changes in the US economy and society in the past century. In the early 1900s, more than one of every three Amer-

¹Jager, Ronald. *The Fate of Family Farming: Variations on an American Idea*. Lebanon: University Press of New England, 2004.

icans lived on farms—a number greater than that at any other point in our country’s history. At the century’s end, the farm population stood at under 2 [percent].”² From these numbers it appears that farmers will be disappearing sooner rather than later.

However, Utah farmers are very resilient. According to the 2014 Commissioner of Agriculture and Food in Utah, LuAnn Adams, Utah farms are on the comeback. “The number of farms and ranches [in Utah] stands at more than 18,000, an increase over the past five years. Our farmers are also more productive as yields of crops and livestock have been trending upward for the last few years.”³ Though Utah farmers appear to be gaining in numbers, the population is growing much faster.

There are more people in the world today eating more food than ever before in history. One would believe that in turn there would be a large amount of farmers making a profitable living by providing for the high demands. However, the cost of food has played a major role in the disappearance of the farmer. “In 1950, average Americans spent over 30 percent of their income on food; in 2000, about 10 percent. In 1950, the farmer received over fifty cents of every food dollar spent; today less than twenty cents. Consumers spend less of their income on food than ever before, and farmers receive a small percentage of that lesser portion.”⁴ Where does the money that is spent on food go? Most of the money spent on today’s food gets sent to the few farms that produce the massive amounts food. These are industrial farms; they only make up about 3 percent of farms in the United States.

It is important to know the differences between industrialized and family farming. “The term ‘farmer’ seems to mean less than it once did. There are big farmers and small farmers and family farmers and corporate farmers. Even the experts debate the meaning of these terms.”⁵ Though it is difficult to find an exact definition for these different kinds of farming, however, below is a basic outline of industrial and family farming along with some important differences.

Industrial farming⁶ is a farm on which large numbers of livestock are raised indoors in conditions that intend to maximize production at minimal cost. Grains are also produced on industrial farms, thousands upon thousands of acres are used in producing grains including corn, beans and

²Lobao, Linda and Katherine Meyer. “The Great Agricultural Transition: Crisis, Change, and Social Consequences of Twentieth Century US Farming.” *Annual Review Sociology* 27 (2001): 103-124.doi:10.1146/annurev.soc.27.1.103.

³State of Utah. Department of Agriculture. 2014 Utah Agriculture Statistics and Utah Department of Agriculture and Food Annual Report. 2014. <http://ag.utah.gov/documents/annualreport2014web.pdf>.

⁴Jager.

⁵Strange, Marty. *Family Farming: A New Economic Vision*. Lincoln: University of Nebraska Press, 2008.

⁶ Industrial farming: also known as factory farming.

wheat. Industrial farming is: “industrially organized, financed for growth, are specialized, management centered, capital-intensive, at an advantage in controlled markets, resource consumptive, and farm as a business.”⁷

Family farming⁸ is defined as follows: “The household is not physically separated from production. On the family farm, the family works together. The division of labor is divided through the household and not through wage labor.”⁹ Family farming is: “owner operated, entrepreneurial, dispersed, diversified, family centered, striving for production processes in harmony with nature, resource conserving and see farming as a way of life.”¹⁰ Family farms are much smaller in scale, but raise a large variety of diverse products.

There are often bitter thoughts between family farmers and industrial farmers, “two fundamental beliefs held by the opposing sides, neither subject to negotiation: that family farms are good while corporate farms are evil; and that corporate farms are more efficient, else why would they pose a threat to family farms?”¹¹ What is more important, quality or efficiency? This is a heated debate between farmers on both sides. Right now it seems as though efficiency has the most importance. “Efficiency is always measured in the cost of inputs per unit of output. The fewer the inputs used to produce a bushel of corn or a hundredweight of pork or a bale of cotton, the more efficient the farm.”¹² This idea of absolute efficiency has led to the idea that “bigger is better,” which in turn has begun to cause major problems with family farms throughout the United States.

It is true that there are very few corporate farms. However, they are massive in size. Some specialize in grains, while others specialize in meats. They have enormous control over the markets in the nation. “More than 98[percent] of the nation’s 2.07 million farms are classified as family operations. Only 3[percent] are incorporated, and of these, nearly 90[percent] are closely held by the operators’ families rather than external shareholders”¹³ It is interesting to see how a once small family farming system over the years can turn into a very large incorporated business. Though incorporated/industrial farms only account for 3 percent of all farms “they produce almost all poultry, half of all hogs, and a quarter of cattle.”¹⁴

With only 3 percent of all farms¹⁵ providing this much product for our

⁷Strange.

⁸Family farming :also known as small scale farming.

⁹Sachs, Carolyn E. *The Invisible Farmers: Women in Agriculture Production*. Totowa: Rowman & Allanheld, 1983.

¹⁰Strange.

¹¹Ibid.

¹²Ibid.

¹³Lobao.

¹⁴Ibid.

¹⁵About 2.07 million.

country, it is evident that there are massive amounts of money involved in operations of this kind of magnitude. What about the other 97 percent? How are the rest of the smaller farming operations throughout the nations supposed to be able to make a living off of the products they provide? The answer is simple, they don't.

It has become the norm for family farmers to work outside the farm, usually a full time job outside of the farm, to provide for the full time job that they come home to every evening. To survive in farming, families take off-farm jobs. Almost 90 [percent] of farmers' household income now comes from non-farm sources. A USDA (United States Department of Agriculture) commission recently determined that annual gross sales below \$250,000 cannot adequately support a family, and that survival of these farms below that size is most endangered.¹⁶

This is the story for not only my family's farm¹⁷, but for almost every neighbor in my community in Utah County. It is a unique situation to have to work a full time job to support a second full time job. This is one of the main reasons why there are not many farmers today, there is too much work involved with this chosen lifestyle and not enough revenue. "The squeeze of the 'farmer problem' is hell on home life too. Farmers and their families feel themselves always rushing, rushing, rushing, caught between the demands of the structure of agriculture and the needs of family members."¹⁸ The stress that farming puts on a family is almost unimaginable. Instead of the family bonding over vacation, they bond in their work. Farming families do not get to travel very far or very often. They are responsible for many different kinds of animals and their gardens. There is a lot of investment here, without very much profit at all. This puts enormous pressure on the workings of a farming household. This brings us back to the question on how an operation like this can survive?

Family farmers have a certain persistence that has led to them to still be able to sustain on their farm and continue their way of life. These are the people that are willing to wake up early in the morning to go to their full time job just in time to come home in the evening to their second full time job. However, there are many other things that they need to rely on to be able to continue their way of life. Family farms rely on the free labor of their family members. More often than not, every single member of the family plays a very important roll whether you are old or young or a man or a woman. "Given the close integration of home and work in farm life, the work that goes on inside the house – the barn for humans – and off the farm premises is as central to success of the operation is the areas of the

¹⁶Lobao.

¹⁷Both my Mom and Dad have outside jobs.

¹⁸Bell, Michael Mayerfeld. *Farming for Us All: Practical Agriculture & the Cultivation of Sustainability*. University Park: Pennsylvania State University Press, 2004.

farm labor where men clock the most hours.”¹⁹ Women make up a large force of farmers on family operations throughout the nation. Women who live on farms not only have domestic housework to worry about, they are also play a vital role on the family farm. “Moreover, on many farms that are run by couples, women put in a large number of hours in the fields, in the barn, and even in the machine shed – not to mention the farm office, where they frequently put in more time than their husbands and male partners.”²⁰

Though women are putting an incredible amount of hours in on the farm their farm duties are typically more domestic than those duties of the men. Women are still the prime household organizers. They usually do more of the paper work, housework, and weeding. This is not to say that women do not perform the tasks of men, because when it is all said and done, regardless of gender, a farmer must do whatever it is they need to do to ensure that the farm can continue to operate. Farmers need “to achieve a balance of the farm that takes care of the land, the animals, and the family, and that generates enough income to provide for their needs and perhaps a bit more besides.”²¹ It is absolutely crucial to find this balance especially in sake of the land.

It has often been said that family farming is sustainable farming. As farmers that typically do not have as much land, but raise a much larger variety of livestock and produce, it is vital to understand the limits of the land and know what must be done in order to sustain the land that is worked. “Family farming has a seasonal rhythmic quality to it... Things are done in batches according to biological requirements... Calving in the spring, haying in early summer, harvesting small grains a little later, farrowing hogs in the fall.”²² Because small farms operate on the biological clock, the land and its resources are used in a sustainable way. This is the reason that there are family farms that have been around for many generations, because the land was made a high priority.

Factory farms are not operated in the same way. This can be and has been very devastating to the environment. An example of this would be the factory livestock farms, hog farms specifically. For factory farmers, pigs are the “cash crop” because they grow so fast and can produce a lot of meat. There are millions of pigs that can be run through a facility to meet the high demands of the markets. With that many animals going through a farm, there is a common concern that is beginning to be realized about the waste by several people and organizations in this country. “The problem is quite simple: massive amounts of [feces]. So much [feces], so poorly

¹⁹Ibid.

²⁰Bell.

²¹Hothaus, Gary. *From the Farm to the Table: What all Americans Need to Know about Agriculture*. The University Press of Kentucky, 2006.

²²Strange.

managed that it seeps into rivers, lakes, and oceans – killing wildlife and polluting air, water and land is way devastating to human health.”²³ This is not just a concern for hog facilities, but also poultry, dairy and beef. “A typical pig factory will produce 7.2 million pounds of manure annually... Farmed animals in the United States produce 130 times as much waste as the human population (87,000 pounds of manure per second!).”²⁴

Where does the waste go? The waste management systems for these huge industries are massive lagoons that are located on the property. “The liquefied waste is pumped into a massive ‘lagoons’ adjacent to the hog sheds. These toxic lagoons can cover as much as 120,000 square feet – as much surface area as the largest casinos in Las Vegas – and be as deep as 30 feet.”²⁵ Conservative estimates by the EPA indicate that livestock excrement has already polluted 35,000 miles of rivers in twenty-two states. To put this into perspective, the circumference of the earth is 25,000 miles.

Not only is factory farming attacking the environment, many of the livestock facilities such as hog farms treat their animals so horribly that people are removing meat products from their diet completely, and do what they can to advocate for these animals. However, for many of these animal activists is surprising to learn that it is only 3 percent of farms that practice these unsustainable methods. It is important to educate consumers that by supporting local family farms, they would be supporting a farming business that believe in the ethical treatment of animals. Small scale farmers make their animals health their first priority, by keeping their animals healthy they cut down on medical costs and have a better product to sell when the time comes.

In Holthaus’ book *From the Farm to the Table*, the author conducted several interviews with many different farms, and one man stated, “The key is going to be the consumers, and now the public is brainwashed by corporations... I don’t know how this earth will survive. We have been so hard on it. We cannot go on like this. Mother Nature always bats last.”²⁶ The issue of environmental damage severe. Why is that people have not heard of these problems? How is it that these issues are not on our evening news more often?

The answer is quite simple. People didn’t question where their meat products come from. There is no regard to where these meat products come from, no questions asked by a vast majority of consumers. Everybody is now at a point where the only people who can make a change in the current system are the consumers. Foer in *Eating Animals* puts the solution quite simply, “If we are at all serious about ending factory farming, then the absolute least we can do is stop sending checks to the abso-

²³Foer, Jonathan Safran. *Eating Animals. Living Ethics: an Introduction*. 2nd ed. 2012.

²⁴Ibid.

²⁵Ibid.

²⁶Holthaus.

lute worst producers.”²⁷

The sustainability of water is another very important aspect to not only farming, but every single person in our population. “Water affects countless aspects of Utah citizens’ lives, impacting our health, economy, environment and recreation. Yet possibly because water seems so readily available, the relative scarcity of water in Utah’s semi-arid climate is often over-looked.”²⁸ It is important to understand where Utah’s water comes from. There are two main ways Utah gets water: In-State Precipitation and Supply among States. Precipitation in Utah is very unique, as a Briefing Paper from the Office of Legislative Research and General Counsel does a good job of explaining it:

With thirteen inches of statewide average annual precipitation, Utah is the second driest state in the nation... The amount of annual precipitation in Utah is not consistent from year to year. Precipitation and the resulting water supply in one particular year rarely match the average, but rather can fluctuate in the extreme from very wet years to very dry years. As a result, monitoring each years’ precipitation, streamflow and existing water storage is critical in projecting the water supply in Utah.²⁹

It is important to take into consideration Utah’s very diverse climates throughout the state. This also plays an interesting role in Utah water. “Utah’s precipitation does not fall evenly throughout the state. Due to extreme variations in elevation, Utah’s mountains receive up to 50 or 60 inches of water per year, mostly as snow, while many of its arid basins and valleys receive only 5 to 10 inches of water each year.”³⁰ This sounds like an extreme amount of water, however when it is all divided up, there is not much left to sustain us all.

Agriculture does use a vast majority of Utah water, however conservation efforts must be made by both farmers and the regular population if one wants to live sustainably in such a dry state as Utah. “Our water is precious, and developing new supplies will cost billions of dollars if we want our children, grandchildren and new neighbors to be able to live here, we need to decide where the water will come from. Will we use less, take water from agriculture, or develop new supplies.”³¹ Sooner than later local people will be faced with the reality of not having enough water to sustain Utah if changes are not done now. “Meeting this demand may require a combination of strategies, including water conservation, the re-

²⁷Foer.

²⁸State of Utah. Utah Legislature. How Utah Water Works: An Overview of Sources, Uses, Funding, and Pricing. Utah Legislature, 2012. <https://le.utah.gov/interim/2012/pdf/00002706.pdf>.

²⁹Ibid.

³⁰Ibid.

³¹Ibid.

allocation of current water uses and the development of additional water resources.”³²

The future of agriculture lies in the hands of the consumers. Family farmers have continued to prove that they will persevere and continue their way of life doing whatever they need to do in order to continue their way of life. But it is up to the consumers to decide whether the future will be bright or bleak. If consumers began to buy their meat products from small, local farms they would find a better product and support a business in their own community helping the local economy, which would then in turn help the national economy.

Agriculture is an industry that few participate in but all rely on it. The first step to solving any problem is recognizing that there is one. In this case, to save the farms they must inform the people about how important this industry is to each of their lives. Luann Adams states that “In our latest Wasatch Front poll, a whopping 95 [percent] of Utahns think farming and ranching are important to the future of the state. And 84 [percent] of Utahns think farming and ranching are responsible stewards of the land.”³³ This sounds like good news for Utah farmers, however thinking that farmers are important and supporting local farmers are very different things.

Though agriculture only contains a very small portion of the state’s population, it relies on all of the population in whole, everyone who consumes food or wears clothing. The National FFA Organization is a huge part of American agriculture and realizes that the future of agriculture relies on many, the last paragraph of the National FFA Creed states, “I believe that American agriculture can and will hold true to the best traditions of our national life and that I can exert an influence in my home and community which will stand solid for my part in that inspiring task.”³⁴ Only by working together Utah’s citizens can make the extraordinary changes that must take place in order to save the family farmer.

³²Ibid.

³³State of Utah. Department of Agriculture.

³⁴National FFA Organization. The FFA Creed. <https://www.ffa.org/creed>.

THE LAKE POWELL PIPELINE PROJECT

By: Justin Wall

Justin Wall graduated from Utah Valley University in 2015 earning a Political Science degree with an emphasis in International Relations. He plans to attend law school in the fall of 2016. Wall was born in California and raised in Fillmore, Utah. During his undergraduate studies at UVU, he spent his summers working with his father, who is a civil engineer. His father specializes in water resources and in this capacity helped small towns in rural areas to create domestic water resources through spring development and well drilling, as well as creating water storage and sanitation facilities.

INTRODUCTION

Southern Utah does not have an adequate water source for its growing population. The Utah State legislature has authorized the Board of Water Resources to build a pipeline from Lake Powell to three counties in Southern Utah in order to offset the projected water deficit in the area. This pipeline will allow Utah to use more of the water rights allocated to it through the Upper Colorado River Compact without having to renegotiate that legislation. Permits and licensing for the project are expected to be issued later this year or early next year. The final project is expected to deliver about 100,000 acre-feet of water to three counties in Southwestern Utah. Projections based on population growth statistics indicate that this water may be needed as early as 2025, leaving little time to negotiate important details. These growth projections have been disputed, creating controversy over the pipeline's necessity.¹

The prospect of pumping the water through a nearly 6-foot diameter pipe uphill to an elevation 2,000 feet higher than the source across 139 miles of terrain presents a number of challenges in itself. While there is the capacity to pump that much water, the expense may be too high for many Utahans whose taxes and fees for water usage may be affected. The total cost for the project is estimated to be just over one billion dollars, including construction, materials, planning and engineering, land acquisition, and fees. The state has agreed to loan the money for

¹Utah State Government“Lake Powell Pipeline Background.” Lake Powell Pipeline Background. <http://www.water.utah.gov/lakepowellpipeline/generalinformation/default.asp>.

the project, and the districts are expected to repay the costs of the loan through water sales. The costs for distribution through pumping and energy as well as maintenance will add additional costs to the project. To help offset these expenses, revenue from power sales will be used.²

The environmental impact of creating such a water supply is also highly controversial. On the one hand, Utah has millions of acre-feet of water allocations in the Colorado River that were legally granted more than half a century ago, much of which is not being used. The pipeline design includes hydroelectric power generators capable of improving the air quality in Utah and creating a clean, sustainable source of energy for decades. On the other hand, the volume of water being piped out of Lake Powell and the Colorado River Basin will undoubtedly have an effect on both the aquatic and land-based wildlife in the area. Furthermore, decreased water volume in Lake Powell will lead to increased salinity, which could lead to a lower quality of the water supplied as well as a less habitable aquatic landscape for many species that live there. Thus regulations will need to be made and contingencies established in the event of over draining the water supply from Lake Powell.

The project is still in the environmental compliance process. Permits from several state and federal agencies are required for access to certain areas and for performing certain operations related to the construction and development of the project. The state is seeking permits from the Federal Energy Regulatory Commission, the Army Corps of Engineers, the Bureau of Reclamation, the Bureau of Indian Affairs, the Federal Highway Administration, National Park Service, and the Environmental Protection Agency. Permits are expected to be obtained by early 2018. The project's design would begin shortly thereafter, culminating construction in 2020 and completion three years later.³

The primary objective of this paper is to provide an opinion supported by data and based on the information available regarding several important changes that building this water system will create; namely, the cost-benefit implications, repayment issues, water quality issues, impacts on the population, and long-term effects of such an undertaking. Southern Utah needs water—one way or another—and that necessity certainly trumps most of the objections raised; however, legitimate concerns and alternative options are still present, and the board of water resources needs to do everything in its power to curb any negative

²Utah State Government.

³Applegate, Julie. "Senate Bill is next Step toward Lake Powell Pipeline." *St George News*, April 3, 2015.

impacts that this project will incur.

CHALLENGES/ POINTS OF DEBATE: COST-BENEFIT ANALYSIS

Of course, it is difficult to come to a conclusion about whether the Lake Powell Pipeline Project is a good course of action without weighing the costs and benefits against each other. The problem with running such an analysis is that nobody seems to be sure of the exact cost. Estimates range from \$1 billion to \$2.4 billion for initial construction costs, where maintenance and delivery costs seem to be anyone's guess.⁴ Impact fees will be paid by increasing the water connection fees, which are already fairly steep, and are they are expected by some to increase tenfold.⁵

A major issue for the project are the initial costs of the project along with the cost of pumping water uphill through a six-foot diameter pipe, which would be staggering and ongoing.⁶ The prospect is to pump more than 100,000 acre-feet of water over 120 miles in order to deliver it to residents in three counties. The districts involved would be required to pay off the loans for the pipeline's construction and excavation, along with also needing to figure out a source of revenue that will fund the pumps and power for the project.

The *Deseret News*, looks to Jeremy Aguero, who is the principal economic analyst working on the project. He is the architect of various models of funding, which tap into a combination of revenue streams such as, water rate increases, impact fees, property sales, and the hydropower component, which is also expected to help cover the cost of the pipeline through the generation and sales of electric power.⁷ Aguero claims that the project, will require a slight increase in property and sales taxes paid, along with impact fees, but it will not be nearly as dramatic as the project's opponents are suggesting. The model shows a "reasonable"

⁴The Associated Press. "Lake Powell Pipeline Too Expensive, Economists Say." AP Regional State Report – Utah, October 17, 2012. EBSCOhost. <http://eds.a.ebscohost.com.ezproxy.uvu.edu/eds/detail/detail?vid=1&sid=2ee627c0-00d1-4f5d-ae03-6a2100afa0e7%40sessionmgr4008&hid=4213&bdata=JnNpZGU9ZWRzLWxpdmU%3d#AN=bad58b2c2d404a9a819a6a58bfb12c85&db=pwh>.

⁵Citizens for Dixies Future. "Lake Powell Pipeline." Lake Powell Pipeline. March 1, 2012. <http://citizensfordixie.org/lake-powell-pipeline/>.

⁶"Lake Powell Pipeline Project." Underground Construction 67.1. *Small Business Reference Center*. April 29, 2015.

⁷O'Donoghue, Amy. "Lake Powell Pipeline Gets Financing Reality Check." *Deseret News*, November 29, 2013.

approach on how to cover the costs associated with the project, but the specific numbers were not published in the article.⁸

There are some opponents of the project that are questioning the need to pump water into Southern Utah at all. According to the state's Water Needs Assessments, Washington County has between 125,000 and 135,000 acre-feet of water for possible development in the future without needing the Lake Powell Pipeline at all, which also does not include the tens of thousands of acre-feet of agricultural water.⁹ Paul Van Dam's article in the *Salt Lake Tribune* claims that, "Washington County currently supports 150,000 people on about 46,000 acre feet of water. Compare that to Albuquerque which supports over 600,000 citizens on about 100,000 acre feet of water."¹⁰ This supports the claim that Washington County is "the West's most wasteful water user and can do far more to conserve and live sustainable in the desert."¹¹

This is a stunning fact, and prompts discussion if there really is a need to pump extra water into the county. If compared against what can be done to strengthen its water conservancy policies, and how much water Washington County can actually save by doing so. This is without considering the water development projects they could possibly tap into for additional water resources without looking to Lake Powell. Furthermore, the projected growth rates at the outset of the project have dropped significantly, which in turn has (1) weakened the prospects for repayment of the loan and maintenance of the pipeline and (2) reduces the urgency of water need in Southern Utah.¹² These two factors alone need to be taken into account, because fewer taxpayers would mean higher repayment rates for a less-necessary commodity.

Despite this assertion, Aguero claims that even conservative estimates on population growth show Washington County meeting their projected water deficit by 2025 without additional resources, and claims that rate increases and skyrocketing impact fees are "assertions that fail to consider the pipeline is paid for in chunks, according to the amount of water that is taken over time."¹³ Aguero's assertions were heralded as a "narrowing of fact and fiction" by Clark, the vice president of international

⁸Ibid.

⁹Van Dam, Paul. "Lake Powell Pipeline Bill Would Be a Drain on Utah." *The Salt Lake Tribune*, March 6, 2015.

¹⁰Van Dam.

¹¹"Lake Powell Pipeline Project."

¹²Citizens for Dixies Future.

¹³O'Donoghue.

banking for Zion's Bank, but again, the numbers in the analysis were not reported.¹⁴ The projected population growth by the completion of the project has now dropped by 200,000 citizens, adding further questions to the already disputed necessity of the project. This issue will be discussed in more detail later in the paper.

REPAYMENT ISSUES

The Lake Powell Pipeline Project is not a cheap solution to the lack of water in Southern Utah. The initial cost of the project alone, not including maintenance and delivery costs, is expected to be \$1 billion.¹⁵ Other sources have listed it even higher than that, ranging from \$1.4 to \$2.4 billion.¹⁶ The interest accrued on paying off a \$1 billion project could quadruple the amount borrowed, and taxpayers could pay up to \$4 billion overtime.¹⁷ On its outset, the pipeline would bring in 5,000 to 10,000 acre feet of water as needed, which would continue to increase with the population size until it reaches its maximum output of 86,000 acre feet per year.¹⁸ This would have an economic impact on the ability to repay the loan because, water sales alone cannot account for the full cost of the project, particularly if it is running at about one-tenth of its capacity. This in turn brings in lower profitability from hydroelectric generation, because there will be less flow into the generator to be converted into power. While the need-based system works for maintenance and delivery costs, it won't pay the \$1 billion dollar loan for the initial project.

The feasibility of completing a project at such a low cost has been called into question by comparison to Nevada's similarly sized pipeline, which was about twice as long, and cost \$15 billion.¹⁹ In fact, as of March 2012, pre-construction research and planning have already cost Utah's taxpayers \$24.7 million. This is well before the legislature has formally agreed to move forward with the project. Further, costs will continue to rise while licensing for the hydropower is obtained along with finalizing the designs and plans. Preliminary studies are expected to last through 2018 and the actual pipeline construction is not expected to begin until 2020.²⁰

¹⁴Ibid.

¹⁵"Lake Powell Pipeline Project."

¹⁶Citizens for Dixies Future.

¹⁷Applegate.

¹⁸Ibid.

¹⁹Van Dam.

²⁰Applegate.

According to State Senator Casey Anderson from Cedar City, funding for the project will be covered by allocating 15 percent of future revenue growth from sales taxes. The funds would be received on loan and the districts participating in the project would be required to pay the money back.²¹ Between the projected growth in the area and the impact fees—which were mentioned above, and are expected to increase tenfold after the project—the projected growth rates were predicted at the beginning of the project would be enough to cover the projected costs. However, projected growth rates have declined since the beginning of the study, and the revenue brought in through utility bills and water taxes don't appear to be sufficient as they stand.²² Again, this was refuted by concrete modeling by Jeremy Aguera, who noted that even on a conservative scale, growth estimates have shown that Washington County will need a substantial new water source by 2025.

WATER QUALITY ISSUES

Another challenge will be the water quality. Depletion of water from Lake Powell could cause an increase in the salinity of the water. Methods have been developed for reversing this effect. However, the effect the pipeline will have on water salinity is not entirely predictable, and adjusting for counter-measures could further increase the project's costs and cause additional problems. The federal government has agreed to share the costs of salinity control under Section 202(c) of Title II of the Colorado River Basin Salinity Control Act of 1974, and usually projects under that law “have involved improvements in irrigation system efficiency.”²³ This would add emphasis to opponent's claims that salinity is indeed an issue, but the law would reduce the cost to the local taxpayers in the form of federal grants to support the water salinity issue.

Utah has massive untapped water rights from the Colorado River, and the Lake Powell project would be a way for Utah to use more of its share of that water.²⁴ The Colorado River has more water exported from it than any other river in the US. The river services more than 24 million people in the country's driest states that include; California, Nevada, Utah, Arizona, New Mex-

²¹“Lake Powell Pipeline Project.”

²²Citizens for Dixies Future.

²³Anderson, Larry. “The Colorado River.” *Utah's Perspective*, 2002:

1-9,6.

²⁴The Associated, Press.

ico, Colorado, and Wyoming.²⁵ It is often considered the most regulated river in the world, due to its high demand in an otherwise dry climate. In the early 20th century, California sought the help of the federal government to fund a project that would grant them water rights from the Colorado River. The other six states protested, and the political and legal solution came as a compact between the basin states to divide the water rights among them, starting January 6, 1922. Congress ratified the agreement in 1928 and the state of Arizona agreed to ratify it in 1944. The compact allocated 23 percent of its water shares to the state of Utah, an amount which Utah has not fully invested in to this day.²⁶

However, despite the legal capacity to use the Colorado River as a source of water, there are environmental concerns regarding its use. Such as, the diminishing water supply of the Colorado River, which the Lake Powell Pipeline Project is sure to exacerbate. This in turn could lead to inadequate water to keep the Lake Powell Pipeline operating. This would put Southern Utah right back into the same position where it was before the project started. Except there would be a billion-dollar loan hanging over Utah's head, that depends on the sale of water. Further draining the water resources from the Colorado River would lead to increased salinity and thus decreased water quality. To rectify such a situation it would require even more financial resources to filter water before it damages the pipeline or the water supply to Southern Utah. Thus there are more variables to consider in water usage that need to be taken into account before one can be sure that such a project would be effective.

IMMEDIATE IMPACTS ON THE POPULATION

Near the beginning of the project, a citizen advisory committee with 29 members known as the Community Integrated Resource Planning Advisory Committee, or CIRPAC, were put in charge of overseeing the issues regarding the planning and implementation of the project. A survey taken after a year of preparation to begin planning the project noted that 94 percent of those on the board did not believe that Washington County had sufficient water to meet the needs of its population growth, and 88 percent believed that "new growth should bear the majority of the construction cost of the pipeline."²⁷ Statements made by the State of Utah and others, imply that is exactly what they plan to do. Impact fees and hook-up fees for the pipeline are expect-

²⁵ Anderson.

²⁶ Ibid.

²⁷ O'Donoghue.

ed to increase substantially, which will help account for a large portion of the project's \$1 billion projected cost. According to economist Gabriel Lodoza, paying off the \$1 billion loan for the project "would require a drastic increase in so-called impact fees assessed on new home construction," which is where much of the funding for the ongoing maintenance and delivery systems would come.²⁸

Additionally, the economic impact of having increased numbers of construction workers for such a long period of time would help the local economies, particularly in the small towns near the project sites. Shops and restaurants in these locations are likely to see a lot more business during the project's construction. Furthermore, many of the construction workers and engineers assigned to the project are likely to be from this area, and the increased funding that comes through would end up in the hands of local citizens.

LONG-TERM EFFECTS AND SOLUTIONS

As discussed earlier in this paper, one of the long-term effects of the pipeline project is the prospect of funding the delivery of the water. Pumping costs are expected to be expensive, and paid out of the pockets of local citizens. There is no end to this monetary charge unless the pipeline ceases to be used. Additionally, while residents of Washington County are the ones who will be responsible for the repayment of the \$1 billion loan, the project is likely to take years or even decades to pay off and will effect other areas of the state. As Van Dam puts it, "What other necessary state issues will not have funding while bonds are tied up?"²⁹

The prospect of water depletion from the Colorado River Basin could have a devastating effect on wildlife. And there will be need for careful continued analysis of water consumption and levels contained in the Colorado River Basin to help maximize efficient use of the water with minimal long-term effects. In other words, the project will be sustainable long-term if the Board of Water Resources and those involved in administration are conscious of the water availability and use, and create programs and plans designed to minimize any damage that such an undertaking will bring.

According to Ron Thompson, a "water czar" from Washington County, regular water rates will help pay for the pipeline, which in turn will help keep impact fees down.³⁰ The economic impact analysis that was reported in the *Deseret News* indicates that op-

²⁸The Associated Press.

²⁹Van Dam.

³⁰The Associated Press.

ponents of the project vastly exaggerate the rates that new homeowners and taxpayers will be expected to pay for their water, but that doesn't mean their rates won't increase substantially. This debate leaves many questions unanswered.

SUMMARY, RECOMMENDATIONS AND CONCLUSION

Based on the research conducted, and considering the arguments summarized within this article, it is necessary to assert the following recommendations for moving forward with the project. First, the state needs to establish whether or not the need actually exists for more water in Southern Utah, given the changes in growth population statistics and demand. Second, if the need exists, it must be established whether piping water almost 140 miles is worth a price tag in the billions of dollars, or if there are feasible alternatives that would be less expensive and more efficient; in other words, is there a solution that would have less of an economic impact on the taxpayers, particularly in Washington County, but also generally in the state of Utah. Third, if it's established that the project is feasible and efficient to proceed with the Lake Powell Pipeline, extra caution needs to be taken to ensure that environmental and repayment concerns are attended to, by minimizing risks and maximizing plausibility for paying off the debt in a timely and efficient way without causing fees and taxes to skyrocket.

If Van Dam's assertions are true, then the population growth statistic has reduced by 200,000 citizens by 2025, indicating a less-urgent need than initial assessments suggested. Furthermore, Van Dam noted that the pipeline bill that was passed in 2006 was based on water use of 328 gallons per person per day (GPPD), a number that has dropped to 279 GPPD as of March this year. Van Dam also cites Utah State Water Needs Assessments, which estimate that Washington County alone has around 125,000 to 135,000 acre feet of water resources that can be developed within its own borders. He also notes that, compared to other counties with similar climates, Washington County has been extremely inefficient with the water resources they already have.

If this evidence is true, it would suggest that Washington County is not facing a state of emergency if it can't get water from Lake Powell, because (1) the population is not increasing at the rate projected in 2006, (2) it has alternative water sources within its boundaries, and (3) even without developing these alternative sources, the county could develop a much more efficient water conservation program that would increase the availability

of water by an undetermined amount.³¹ As staggering as these statistics are, an effective counter to them would be first, to prove despite the slowed growth that Washington County still needs more water. Aguero asserted this fact in his analysis given to the CIRPAC, in which he claimed that even conservative estimates demonstrated a need for a greater water supply by the year 2025.

Secondly, once the need was established in spite of the slowed growth statistics, someone would need to do a cost-benefit study showing how much it would cost to develop all of the available water in the region. Van Dam's citation of the Water Needs Assessments is certainly an eye-opener, but developing 125-135,000 acre feet of water on paper within Washington County's borders could easily cost well over \$1 billion. It would most likely involve hundreds of projects costing seven to eight figures each. For example, a recent project in Utah that the author of the paper participated in would easily have reached \$2-3 million if the water had to be piped to individual houses. The well that was drilled produces only 161.31 acre feet of water per year. Admittedly, not all projects are created equal; each project would have a different estimated cost, which is why extensive analysis would need to be done to determine the plausibility of each approach. The cost of developing Washington's available water resources would have to be proven less than the cost of the Lake Powell Pipeline.

Third, this analysis would have to factor in the demand—as not all of the hundreds of possible projects would have to be done to meet Washington County's needs then balanced against a more efficient water-conservancy program. Then an assessment for the long-term total price of the life of the pipeline loan.

After reassessing the projected demand based on the recent growth statistics, reconsidering alternative water sources, and providing a professional cost comparison with an improved water-conservancy program factored into it, it would be possible to determine the necessity of moving forward on the pipeline project. Issues like repayment and environmental effects need not even be considered before the state determines whether or not the pipeline project will be necessary. If it is established that there is a need to pipe water in from Lake Powell, then making it happen becomes the first priority, and the environmental and repayment issues will be dealt with when necessity. Law and policy have already established how to handle these issues, and administrative organizations like the FERC specialize in environmental concerns. The Lake Powell Pipeline Project has been without precedent, thus far. If the need to build the pipeline is found to be obsolete, and an alternative water resource develop-

³¹Van Dam.

ment plan is found, then the state need not even deal with such problems; instead, the funding will be allocated at a much more efficient rate to smaller-scale projects throughout Washington County.

WOMEN OF THE ROCKY MOUNTAINS: DAYS FOR GIRLS

By: Sadie Conover

Sadie Lauran Conover is a Political Science major at Utah Valley University. Currently, she is living in Provo, Utah with her husband, Brett who she married in 2015. Conover is a Springville High School graduate and lived in Springville, Utah most of her life. She volunteered in the community on the Springville Museum of Art's Art Royalty, and on the Springville City Youth Council. Conover hopes to someday open her own political consulting business.

Imagine a world where a girl's period causes her to miss up to two months of school each year. A world where feminine hygiene supplies do not exist, causing girls to use mattresses, leaves, newspaper, corn husks, or any other resource they can use to collect their body's discharge. For some girls, this world is a reality. Every month, there are millions of women and girls who lose five days of their life due to the lack of feminine hygiene supplies. This means there are millions of missed days of school, work, and ultimately missed opportunities for women and girls.¹

In India, once a girl starts menstruating many are likely to drop out of school, and in Sindh, Pakistan 56 percent of women claim that their period influences their work. If you were to combine the total number of days a woman menstruates, the yearly total would be around 60 days. A female could lose two months each year of going to work or school. The organization Days for Girls is working to change this problem, by providing feminine hygiene supplies that will last 2-4 years. That means in four years a woman can get back 240 days of her life, that would have otherwise been lost due to menstruation.²

Kristine Fredrickson wrote an article about the nonprofit organization, Days for Girls and its founder Celeste Mergens. Days for Girls is a nongovernmental/nonprofit organization that operates in over 70 countries worldwide and was founded by Ce-

¹Days for Girls International.Why Days for Girls Matters.<http://www.daysfor-girls.org>.

²Ibid.

leste Mergens.³ The organization makes feminine hygiene kits that contain a pair of underwear, a shield that snaps onto the underwear to avoid forward movement, eight reusable pads that can be layered as needed, a bar of soap for cleaning, and two plastic bags to sort the clean and unclean pads.⁴

Mergens, was previously trained in sustainable development and started working with a non-governmental organization that helped children in an orphanage in Dagoretti, Kenya. The orphanage homed 400 orphans. The very first time Mergens laid eyes on these children she fell in love with them and began doing everything she could to help improve their living conditions.⁵ Previously the orphanage would spend \$200 a day to cook meals, however, Mergens was able to make a difference by lowering the cost of meals to \$11-12 per day. She did this through fundraising so the orphanage could construct “rocket stoves.” The orphanage was now able to put the saved money toward additional food and other items they might need.⁶

In 2008, Kenya was a country living in violence after a rigid election. Mergens received a call from the orphanage telling her that the number of orphans had surged to 1,400 due to the election violence. Because of the increased numbers they ran out of food and the children had not eaten in two days. They petitioned desperately for Mergens help.⁷

As a member of The Church of Jesus Christ of Latter-day Saints (LDS), Mergens went to bed that night and prayed fervently to know how to help these people get the supplies they so desperately needed. She prayed until she could not physically pray any longer, and was so drained she fell into a restless sleep. Mergens awoke in the middle of the night, with one question going through her mind, “Have you asked what they are doing for feminine hygiene?”⁸ Previously, the thought had never crossed her mind.

The thought would not leave her mind, so she emailed the directors of the orphanage, inquiring how they handled the menstrual needs of the females. Unexpectedly, Mergens received a

³Fredrickson, Kristine, “LDS World: Days for Girls Is Changing Girls’ Lives around the World.” *Deseret News*, July 20, 2014. <http://www.deseretnews.com/article/865607186/Days-for-Girls-is-changing-girls-lives-around-the-world.html>.

⁴Ibid.

⁵Fredrickson.

⁶Ibid.

⁷Ibid.

⁸Ibid.

quick answer to her question, they simply responded by saying, “Nothing.”⁹

Mergens inquired again, asking for more information on how they handled this situation. The response she received stunned her. She was informed that “the girls wait in their room and sit on a piece of cardboard on their bed for three to four days. If they can, they arrange for friends to bring them food and water.”¹⁰

After receiving this news, Mergens did an Internet search to see how this problem was being handled around the world. She was alarmed to find out that there was nothing being done to address this issue. She knew she needed to figure out a way to help these girls because of the dilemma it placed the girls in. Fredrickson explains what happens “[i]f a girl misses three to seven days a month while menstruating, that translates to up to two months less schooling per year. As a girl falls farther behind, she often fails or leaves school early.”¹¹

Fredrickson continues to explain the importance of girls continuing their education. In Africa it is highly important for a girl to attend school after the age of twelve. One additional year of schooling after the age of twelve opens up more economic doors and opportunity for girls, and improves the overall economy of Africa. The key to opportunity and better quality of life for girls across the globe is having an education.¹²

It was not an option for Mergens to just send money for feminine hygiene products. Providing food and shelter was the main priority for the orphanage and if money was sent it would go towards those items before purchasing menstruation products. Mergens also realized that this would be a sensitive issue to tackle, due to the local culture and traditions of these girls. Therefore, she started researching and listening to the women who were directly there.¹³

The first way she found to solve this problem involved “a company that provided disposable feminine pads for \$200 for 500 girls for one month.”¹⁴ Mergens sent the pads, and then took a trip to Kenya three weeks later to see if they received the products and how they were working. What she found was the fence surrounding the orphanage was full of pads that had been washed out and they were trying to reuse them. Mergens soon

⁹Ibid.

¹⁰Ibid.

¹¹Fredrickson.

¹²Ibid.

¹³Ibid.

¹⁴Ibid.

realized that as amazing as it was for these girls to have “disposable” pads, in Kenya the situation was completely different. They did not have the resources to dispose of the pads like in Western countries.¹⁵

Due to cultural issues with using insert-able products internally, the correct solution to the problem seemed to be pads that could be washed and then reused. The first kits included washable white pads, that were fashioned after disposable pads. However, they were bulky and moved forward when the girls walked. The used pads were then washed out and hung on the fence but, they still showed blood stains. This stains were a taboo, and the women began to stop drying or using their kits. After zealous dialogue with the women using the kits, and plenty of trial and error they finally found a feasible solution for the kits.¹⁶

Fredrickson describes the kits Mergens distributes “contain a pair of underpants and a thin shield with a water resistant polyurethane liner that snaps under the panties so that it does not shift forward. It also contains eight flannel, tri-fold reusable pads that can be layered as necessary. Also included are a washcloth, a bar of soap for cleaning purposes, and two plastic bags for clean and soiled pads.”¹⁷ The reusable pads are brightly colored and patterned, so that stains remain invisible after a washing. The actual pads look like a washcloth when hung out to dry, due to their square shape and appearance. The feminine hygiene kits are a perfect solution for countries living in poverty that have a good supply of water and will last a woman two to three years, if they are cared for correctly.¹⁸

They are now supported by 170 chapters of women around the world who construct, assemble, and distribute these kits worldwide. Days for Girls has become a very successful non-profit organization that has distributed 200,000 kits to over 70 countries internationally since the organization’s initial founding in 2008.¹⁹ The chapters associated with Days for Girls not only distribute the kits, they also educate women on how to make their own kits, about their bodies and the menstruation process. Many of the women and girls had no previous knowledge of menstruation, and it was culturally prohibited to speak of such things. The girls would thus feel dirty or unclean, and

¹⁵Ibid.

¹⁶Ibid.

¹⁷Fredrickson

¹⁸Ibid.

¹⁹Ibid.

consequently the community would treat them as such.²⁰

One of the highlights for Mergens is to explain to women and girls the meaning of menstruation and that without periods people would not exist. Fredrickson continues to quote Mergens that “menstruation is a natural process in the female body fertility cycle.”²¹ As the women begin to understand the connection between menstruation and the powers of procreation they become filled with joy.

Mergens has seen other benefits from feminine hygiene education as conversations open up to sexual abuse, domestic violence, rape, human trafficking, and the mutilation of a woman’s genitals.²² Women have been introduced to the idea that they have the right to defend themselves and a new understanding that they have control over their own body.

Living in the United States it’s hard to believe there are women around the world who never knew about menstruation and they have the right to decide what happens to their own body. It’s hard to imagine there are women who have their genitals mutilated, and struggle to go to school because of menstruation. Yet, here in the United States some of the biggest political issues are centered on abortion, which women living in disadvantaged countries are fill with joy at the thought of having a baby.

A young 21 year-old woman, Shauna Sampson, who lives in Provo, Utah, understands the reality of these girls. Sampson was able to take a day off from her normal activities to assist in the assembling of feminine menstruation kits for Days for Girls. When reflecting on the experience Sampson says, “While cutting fabric for hours until my hands were sore, I had time to reflect upon how such a simple task could make such a big impact in the lives of so many girls...around the world. Many people don’t realize what an ordeal these girls go through by not having a few simple feminine items that we take for granted every day.”²³

Sampson also had the opportunity to volunteer in Kenya for a few weeks last summer. She saw firsthand the hardships the Kenyan people went through everyday, including the issues women and girls faced concerning their periods. A principal from the school Sampson helped at recently contacted her regarding ideas on how to provide sanitary feminine menstruation products to the girls in Kenya. Sampson was able to tell the principal about Days for Girls. If all goes well, Sampson will be

²⁰Ibid.

²¹Ibid.

²²Ibid.

²³Sampson, Shauna. “Days for Girls Experience.” Email to the author. April 19, 2016.

able to send sanitation kits to the very girls she visited last July in Kenya.²⁴

The story of Christine Nairobi, who is now a Days for Girls Ambassador in Nairobi, Kenya, knows the true struggle of trying to attend school in a poverty-stricken country. At just 12 years-old Nairobi's mother left her to stay with her grandmother. She cut-up her clothes to create makeshift pads for herself. However, one day Nairobi started her period at school. Blood had soaked through her dress. When she came home, she found that her cousins, who were also living at her grandmother's, had thrown away her homemade pads. Without any pads she could not attend school when she was on her period. She recounts:

For three days a month, I could sleep the whole day. I used leaves. It didn't help. The old rags were no more, so no more school. Every three days of the month... The teachers realized there was a problem. The male teacher saw a weak spot. So, they gave me money for sex so as to get pads. Life was hard. Even my close relatives could rape me now.²⁵

At just 14 years-old Nairobi found herself pregnant. She dropped out of school and was forced to sleep in the street. While living in the streets with her daughter, she met a woman who let her live in her home as a live-in maid. It was there, Nairobi met her husband, who took her to learn dressmaking.

After learning to sew Nairobi started making homemade pads to donate to local orphan girls at her church. Then in 2014, she met two women from the United States who asked her if she would like a scholarship to study with Days for Girls. Nairobi said, "yes Carrie and Marilyn, but on one condition that no writing and reading." They both told me it's just sewing, no writing."²⁶

Nairobi was so excited that she would be able to fulfill her dream of helping young girls that might be in the same situation she had been in. She cried in the airport on her way to America, not because she was nervous or scared. She was so happy to be able to help others in hope that one day no girl would have to go through the things she had to.

Currently, Nairobi is working to ensure the needs of others are met. She says to women and men alike, "give us pen to go to school not their penis, to ask for our books not our boobs, to pay for our school fees not our bride price, give us education not your ejaculation and I say no to early marriage, but instead

²⁴Ibid.

²⁵Nairobi, Christine. "Christine's Story." Days for Girls International. <http://www.daysforgirls.org/#!/their-stories/c13r4>.

²⁶Ibid.

to keep girls in school with Days for Girls Kits.”²⁷ She acknowledges there was no one in her life to protect her from such awful things but, she is glad that her life is now spent standing up for girls. Nairobi is proud of her life, the purpose she has found, and is grateful to all those who made it possible for her.

Another example of someone who is passionate about Days for Girls is Linda Guzha the Director for Days for Girls Zimbabwe. Guzha suffered in high school, like so many other girls did because, of her

period. When reflecting on the experience Guzha states, “I used to hate my period.... It meant I had to choose between humiliation of managing a period with no resources at school or stay at home.”²⁸

Guzha says that most often she would have to use newspapers when on her period, which consequently gave her a rash. She was always afraid of having her period at school, and getting blood all over her uniform. She explains that when this happened to her or other girls in her class the boys would always make fun of them, which would stop the girls from attending school. This would consequently interrupt their learning in school. And this is why she became the director of Days for Girls Zimbabwe.²⁹

A local mother from Provo, Utah, Ann Lewis has traveled around the world, and also lived in Africa. When she discovered Days for Girls, she already had a full understanding of how valuable an organization that could provide feminism hygiene products to girls internationally. Lewis wrote about Days for Girls on her blog and said, “Everybody I know should be doing this.”³⁰

As a member of the Church of Jesus Christ of Latter-day Saints, Lewis participated in a humanitarian activity that was hosted by her ward.³¹ They were helping to assemble and create everything from the panties, liners, shields, washcloths for Days for Girls kits. Lewis comments that from her interaction with underdeveloped countries she saw girls who do not have fem-

²⁷Nairobi.

²⁸Guzha, Linha. Days for Girls International. Their Own Stories. A Testimonial from Girls who have been Involved with Days for Girls. <http://www.daysforgirls.org/their-stories>.

²⁹Ibid.

³⁰Bennett, Jeanette. ““Days for Girls’ Keeps Africans in Class during Periods.” *UtahValley 360*, July 19, 2014. <http://utahvalley360.com/2014/07/19/utah-valley-chapter-days-girls-keeping-african-schoolgirls-class-periods/>.

³¹A “ward” within the Church of Jesus Christ of Latter-day-Saints is similar to a congregation. However, boundaries determine the location of meeting house and time of attending church.

inine supplies using feathers, cardboard, stones or newspapers as protection, and they were unable to attend school. As a result, these girls fall behind in school, and may marry at a young age.³²

However, Lewis notes that if a girl can continue attending school, despite menstruation, “raises her family’s educational quotient, and she feels stronger in her community and is able to raise her voice.”³³ The girls also have less of a chance of being raped or abused by men when they continue to attend school. Solving the problem of lack of feminine hygiene products has social and economic benefits to both the community and the girls living within these societies.³⁴

Lewis along with others that founded the Utah Valley Days for Girls Chapter, are assisting girls internationally. Celeste Mergens the founder of Days for Girls made the following comments about this chapter, “Utah is phenomenal...The women in this community are extraordinarily aware of the people in the world...The women in Utah County are showing the rest of the world how it’s done.”³⁵ Since the founding in 2013, of the Utah Valley Chapter of Days for Girls, they have been able to assemble thousands of kits. During the summer of 2014, there were as many as 14 local LDS girl’s camps that participated in creating the kits as a service project.

Lewis and Mergens feel connected in a way they describe as “mission companions” as the two of them have such a passion and drive to create and distribute these kits. Lewis hand delivers kits whenever she possibly can. Thanksgiving of 2013, Lewis delivered thousands of kits to Mali and Africa. She remarks that the girls and women were overwhelmed upon receiving the kits and told them she would return and deliver more kits.

Lewis is a family history teacher, a mother of three children, and a philanthropist. Despite all of this she is still able to spend her time speaking to groups of people who want to help Days for Girls. She has been able to turn the excitement they have for the project into providing thousands of finished kits. She travels around the globe delivering kits, and educating the girls she delivers to about feminine hygiene.

Last year, channel KUTV in Utah did an inside story on the Days for Girls organization. The story shows what a service activity for Days for Girls might look like. The reporter states, “Step inside a basement room inside an office complex in Orem

³²Bennett.

³³Ibid.

³⁴Ibid.

³⁵Ibid.

and you'll see some very busy ladies at work. They are cutting, and sewing, and assembling something that is very personal and important to young women all across the world. Pictures of these girls hang on the walls as reminder of what this work is really all about."³⁶

The report from KUTV also says that feminine hygiene is an issue that most humanitarian relief efforts overlook, as they are only concerned with things like food, water and shelter. Debbie Young, the Utah regional coordinator for Days for Girls states, "I think it's a shock to all of us, me included...I think we just assumed that in this day and age all these girls would have this available to them."³⁷ However, girls living in underdeveloped countries do not have the supplies we assume they have.

Volunteer Julie Treadwill says the most exciting part of working with Days for Girls besides delivering the kits is educating the girls on the female cycle. Treadwill notes that this work truly is about teaching girls that menstruation is a gift, not a curse. Many girls in these countries believe that their period is a deadly disease. Fellow volunteer Melissa Clark notes that in some countries blood is associated with death, which would explain why some girls believe that they have been cursed with some horrible disease upon their first period.

Treadwill also remarks that women understand this issue, and that's why so many women participate in the effort. Giving back is so essential because here in the United States we are blessed with so much, we have no reason not to give back so that others may have resources to feminine hygiene as well. Clark says the organization's name, Days for Girls is directly connected to the fact that they give back days of a girl's life, allowing them to contribute those days to education.

The chapter of Days for Girls Utah was founded in 2013. Since this time the chapter has made over 30,000 kits to distribute to girls across the globe. In 2015, kits went to 27 countries and 10,000 of those kits were created within six months. The volunteers of the Utah chapter hope to give tens of thousands more of those kits in the coming years. As of 2015, the Utah chapter of Days for Girls had 20 chapters throughout the state, making Utah the state with the most chapters in the United States of America.³⁸

³⁶Rascon, Dan. "Days for Girls." KUTV, October 6, 2015. Youtube. <https://www.youtube.com/watch?v=1zDmT771XQE>.

³⁷Ibid.

³⁸Ibid..

Days for Girls is an organization that was founded on faith.³⁹ The entire process of creating the organization started with a prayer that the founder Celeste Mergens asked for guidance to help the people in Kenya that desperately needed food and shelter. Her answer wasn't what she expected but, it ended up helping women all over the world. God knew what these women needed, and she became the instrument in his hands to fulfill that need.

³⁹Fredrickson.

COMMUNITY BASED LIVING AND ITS APPLICABILITY TO THE WORLD TODAY: CASE STUDY OF THE MORMON PIONEERS

By: Darian Hackney

Darian Hackney is a student at Utah Valley University, studying Political Science and would like to earn a Russian Studies Minor and Philosophy Minor. She intends to go to law school after completion of her undergraduate degree at UVU. She enjoys hiking, swimming, camping, reading, listening to music, and spending time with friends and family. Hackney also enjoys discussing government and politics, traveling, and meeting new people. She recently returned from a two-month program where she lived in Moldova teaching English to law students.

Fleeing persecution in 1847, Mormon¹ pioneers settled into the territory that is now known as the state of Utah. The basic foundation of their settlement was based on Utopian ideals manifested through community based living. The ideals of community based living were prominent during the settling of Utah and have an impact on the state and its people to this day. Some of the concepts and elements of this model could be relevant today in developing nations or people in the world. Several topics worth discussing are community based living, the welfare system of the Church of Jesus Christ of Latter-day Saints (LDS), the role of women during settlement, ideals that persisted through time, and the use of community based living as a model for developing nations and peoples.

During the early settlement of Utah, Mormon pioneers created a community-based society. Joseph Smith, who was known as the first Mormon prophet, started the LDS religion. Joseph Smith said, "If ye are not one, ye are not mine." This statement briefly describes the ideals and mindset of the Mormon pioneers and how their settlement was driven by a sense of unity. The quotation mentioned above was a revelation that Joseph Smith received on stewardship. He envisioned a community where citizens donated their surplus back to the community, and from that point wealth was distributed according to the wants and needs of society. The implementation of the revelation received

¹Mormon is a nick-name given to members of the Church of Jesus Christ of Latter-day Saints.

by Smith was postponed due to persistent persecution but, it was later recognized when the pioneers settled in Salt Lake valley.² According to Leonard J. Arrington and others in the book, *Building the City of God, Community and Cooperation among the Mormons*, the revelation that brought about the “law of consecration” and “stewardship” worked to change the individualistic economic order of “[...]Jacksonian America into a system characterized by economic equality, socialization of surplus incomes, freedom of enterprise, and group economic self-sufficiency.”³ This revelation is responsible for an emphasis on public, rather than private property rights for Mormon pioneers, based upon the Mormon principle that everything on the earth belongs to God.⁴

Philosopher Martin Buber stated, “The real beginning of a community is when its members have a common relation to the event overriding all other relations.”⁵ Essentially, communities have to have some unifying event in order to exist, according to Buber. The Mormons were commonly unified through their religion and because of that, they also had common experiences of persecution and discrimination. Due to these common experiences, Mormon pioneers were able to unify based upon being unaccepted elsewhere in American society. In the 1840s, Mormons moved towards an “ideal community.”⁶ According to Hine the community, “would be culturally and ethnically homogeneous, politically egalitarian, socially and economically classless, and reasonably stable in time.”⁷ The ideals of this community were given by church leaders as, “plainness in living and financial self-sufficiency.”⁸ In accordance with this principle, Brigham Young⁹, the second prophet of the Church, created a community in Utah in 1847 that would reflect those ideals.

Upon arriving in Utah, the Mormons faced difficulty. The valley was a desolate desert, and in order to survive on the land water needed to be diverted from mountain streams. Successfully

²Hine, Robert V. *Community On the American Frontier: Separate but Not Alone*. Norman: University of Oklahoma Press, 1980.

³Arrington, Leonard J., Feramorz Y. Fox, and Dean L. May. *Building The City of God: Community and Cooperation Among the Mormons*. Urbana: University of Illinois Press, 1992.

⁴Ibid.

⁵Hine.

⁶Ibid.

⁷Ibid.

⁸Ibid.

⁹Brigham Young was appointed as the president of the LDS Church after Joseph Smith’s murder in June 27, 1844.

creating an irrigation system is known as the “economic salvation of the arid West.”¹⁰ The means of settlement in Utah can be categorized as “cooperative colonization.” The settlers were looking for a permanent home. The settlements didn’t happen accidentally; they were the result of careful planning. Communities were structured abnormal, in comparison to the nation. As members of the Mormon faith they built homes together, similar to the structure of a fort. This in turn created “compact village communities” where the homes were in close proximity to each other and the surrounding farms were part of the agricultural common effort to survive. This structure promoted socialization and interest in the Church.¹¹

The Mormon pioneers, and church leadership aimed for independence from outside sources. The reason for this principle is attributed to their experiences of persecution. In order to unite the people, Brigham Young advised members of their faith to avoid other enterprises at first, sticking to agricultural practices and raising their own food. Young’s fear was that mining and similar enterprises bringing workers into the territory would divide and demoralize the Mormon pioneers, which would inhibit success to the newly formed settlements. The importance of cooperation and unity showed itself in the form of Irrigation. As the Mormon pioneers were only familiar with the Mississippi Valley farming techniques, they soon found they were drastically different, due to the barren conditions of Utah. Construction of ditches and canals for irrigation were necessary for survival and without the devotion of the entire community the task would have been too large for a few individuals.¹²

Equality was the foundation of Mormon settlements, especially in the context of irrigation and property. Irrigation was absolutely necessary for agriculture, and a principle of the Church was self-sufficiency. Pioneers were given water rights based upon the amount of labor they put into building the irrigation system. Based upon the efficiency and organization of the Church, the labor and the rights that ensued from it, were relatively equal.¹³ As mentioned earlier, the revelation received by Joseph Smith was said to explain a divine economic system. This led Smith to require members of the LDS Church to deed their property to the church through a prayer of consecration. Bishops, who had

¹⁰Gardner, Hamilton, “Cooperation Among the Mormons,” *Quarterly Journal of Economics* 31.3 (1917): 461-499.

¹¹Gardner.

¹²Ibid.

¹³Ibid.

authority over wards,¹⁴ would lease the land to that member of the Church for life. The Mormon pioneers were able to use the land according to the needs of the community and their family. Anything produced in excess was to be given back to the Church for welfare purposes. Arrington defines “property rights,” as being “limited, tentative, and temporary. Property rights are derivative and subordinate; property is a conditional trust. Property is to be used, according to the voice of the revelation.”¹⁵ In accordance with the ideal of no private property ownership, settlers were not given property if they were not willing to utilize or develop it. Brigham Young stated that, “No man should keep money or property by him that he cannot put to usury for the advancement of that property in value or amount, and for the good of the community in which he lives.” The Mormon pioneers operated under church leadership that told them to value group welfare over individual freedoms or indulgence.¹⁶

According to Albert L. Seeman, “An outstanding characteristic of the Mormon groups with their strong religious motivation was their passion for equality.”¹⁷ Seeman even mentions that the Mormon’s passion for equality resulted in a communist organization. It is evident that there are similar ideals between Communism and the Mormon settlements in Utah. Elements such as the Utopian style planning of the city, and ideals of equality above individual achievement, can be used as support for his claim. The ideal and practice of Mormon pioneers of only being entitled to as much as they need to support themselves and their families can also be seen as a similarity to Communistic thought.¹⁸

The heavy emphasis on equality led to the Mormon Church’s extensive welfare program. Albert Fisher states, “The Mormon Church operates what is probably the most comprehensive and successful private welfare program of its size in the United States.” He also mentions that government subsidies are not provided to the Church for any of the welfare services that are provided. The organization of the Church is extremely effective in determining the needs of each member. Since 1830, the Mormon Church has taken care of members in practice and philos-

¹⁴(Wards) are groups of people in the LDS church differentiated by geographical means.

¹⁵Hamilton.

¹⁶Hamilton.

¹⁷Seeman, Albert L. “Communities in the Salt Lake Basin.” *Economic Geography*, July 1938, 14, no.3; 300-308, doi: 10.2307/141347.

¹⁸Ibid.

ophy. Fast offerings and tithing are two of the ways that the LDS Church gains funding for their welfare programs.¹⁹

Leonard J. Arrington, writes in *Building the City of God, Community and Cooperation among the Mormons*, that the underlying objectives of the welfare program are the economic well-being of the Mormons, to diminish dependence on outside sources, increase self-reliance, and all this must be done in a manner consistent with church principles.²⁰ Funds are generated through fast offerings and tithing. Each member of the Church pays 10 percent of their income to the Church, and if the need should arise, the Church welfare organization will assist them as well. Fast offerings were introduced in the 1850s; this entails members of the Mormon faith to fast for a 24-hour period each month, and donate the food that was saved. The Church would distribute the food to the poor based upon the need of church members. Now, fast offerings are typically donated monetarily. The hierarchy of the Church organization is key to its success in welfare programs.²¹

Based upon Utopian ideals, equality was a key priority in the settlement of the state of Utah. Along the lines of equality, a relevant topic is gender equality. Currently, there are many gender stereotypes in regards to work, as in what a person of each gender is required to do in society. The general rule of thumb is that women do housework and childcare, while men compete in the economy for jobs and salaries to provide for their families. This stereotype even persists throughout the past. However, according to several sources that stereotype is incorrect when discussing Mormon pioneers. During the settlement of Utah, work was not categorized as “men’s work” or “women’s work,” women were required to do whatever needed to be done in accordance with her skills or resources. Women and girls at this time not only did household work but, they were also required to help wherever there was need. Many women gleaned fields, gathered eggs and produce, made clothing and hats, fed animals, cleaned chimneys, milked cows, pitched hay, and even herded livestock.²²

Women helped their parents, spouses, neighbors, and siblings. Other jobs included: digging irrigation ditches, sheering sheep, spinning cloth, cutting and stacking hay, washing clothes, plow-

¹⁹Fisher, Albert L. “Mormon Welfare Programs: Past and Present.” *Social Science Journal*, 1978, 15.2; 75-100.

²⁰Arrington et al.

²¹Ibid.

²²Leonard J. Arrington and Susan Arrington Madsen. *Sunbonnet Sisters: True Stories of Mormon Women and Frontier Life*, Salt Lake City, Utah: Bookcraft, 1984.

ing, planting, and fertilizing. Based upon the planning and design of the Mormon community homes were close together and women attended many church meetings. Adult women were part of the “Female Relief Society” where community work and helping the poor was a priority. Most women in the Relief Society spent their time acting as midwives, cooking meals for families in mourning, running general stores, acting as managers and handling business details, bookkeeping, running telegraph networks, overseeing food supplies for the poor, and much more. Women during this time sent other women to medical colleges to learn how to practice medicine, so they could come back and train other women in the community. Women were an integral part of society, especially when men were fighting in the military, on missions, or working on other public projects, women were left to plow the fields and harvest the crops.²³

Often times, women have been left out of history, which causes their influence to be muffled or even ignored. In the essay “History’s Sequel: A Source Essay on Women in Mormon History,” the authors state, “by denying her a real place in history, she has been effectively denied an identity and individuality.”²⁴ Perceptions of pioneer women are often deluded and stereotyped, but realistically the requirements of settling a society from nothing involve labor from every able bodied individual.²⁵ Without the influence of women the success of the Mormon settlements in Utah would not be a model that developing nations could adopt or implement.

Understanding this ideals and practices of the Mormon settlements could be very beneficial to developing nations around the world. Albert Fisher states that, “This information should help other interested private groups to develop or improve their own welfare programs. Also provides ideas to social scientists on how to combat one of our more serious social problems.”²⁶ Many factors that led to the settlement of Utah by the Mormon pioneers cannot be duplicated, however, the implementation of a similar welfare program could allow for large benefits in developing nations. Several caveats do exist in implementing a similar community based model. The two major issues are lack of isolation

²³Arrington, Leonard J. “Rural Life Among Nineteenth-century Mormons: The Woman’s Experience,” *Agricultural History*, 1984, 58.3; 239–246.

²⁴Madsen, Carol and David J. Whittaker. “History’s Sequel: A Source Essay on Women in Mormon History.” *Journal of Mormon History*, 1979, 123.

²⁵Ibid.

²⁶Fisher.

and unifying themes or ideals. In the world today, finding an area that is isolated to settle is often not readily available, meaning that doing away with private property rights and achieving some sort of isolation may not be an option for developing nations. Another potential problem is the lack of unifying objective or theme; the Mormon pioneers were united through previous experiences of persecution and their faith. Without a church as a governing body, collecting percentages of income may be met with resentment, along with motivation and voluntary action may be difficult to inspire without a unifying theme of religion and faith. An exact replica need not be necessary, since many of these elements have changed in Utah over the years. However, the ideals and organization of the original community can be adopted and used to benefit developing nations.

In a speech given by the Utah's Governor Gary Herbert, he said that the state of Utah tries to follow several objectives. Those objectives are: don't have unreasonable debt, don't spend more than what was earned, have a "rainy day fund," and do everything possible to empower the private sector of the economy.²⁷ Interestingly enough, almost 200 years later, three-fourths of those objectives are consistent with the original principles of the Mormon Church practiced by the Mormon pioneers. This shows the timeless extension of community based values established during the settlement of the State of Utah has persisted through church and government leadership, that is based on the foundational values of people united under a common experience, as well as having a passion for equality.

²⁷Herbert, Gary. Speech given at Utah Valley University. 2015.

FROM UNITED NATIONS TO THE INTER-MOUNTAIN WEST: HOW MANDATED PARENTAL ACCOUNTABILITY COULD INCREASE SUSTAINABLE NURTURING AND SUSTAINABLE LIVING

By: Megan Raines

Megan Raines graduated from Brigham Young University in 1998 with a BA in Humanities, and returned to complete more undergraduate work at Utah Valley University in 2014. She will graduate with a degree in Political Science/International Relations in April 2017, and then intends to pursue a graduate degree in Asian Studies. As a foreign service spouse and voice teacher living in Beijing, Raines shared her recordings and writing about her daily experiences raising ten children in China in her blog www.tenandsoprano.com. In 2010, she moved back to the United States with her children, where she began life as a single parent. Raines is passionate about encouraging women to make education and career development personal priorities.

In 1989, the United Nations (UN) Convention on the Rights of the Child (UNCRC), established a human rights treaty to include the child's basic social, health, political, and cultural freedoms under the protection of international law, which was adopted by the United Nations General Assembly. In the preamble, the authors refer to the family as the "foundation of freedom, justice and peace in the world...[they declare] childhood is entitled to special care and assistance...[and recognize that] for the full and harmonious development of his or her personality [the child] should grow up in a family environment."¹

States that joined in ratifying the treaty agreed to have their national laws, and the degree in which they were enforced, monitored by the UN Committee on the Rights of the Child, and to become subject to sanction if they were in noncompliance. In Article 18 section 1, of the UNCRC it iterates that among the protectable and enforceable rights:

State Parties shall use their best efforts to ensure recognition of the principle that both parents have common responsibilities for the upbringing and development of the

¹United Nations Human Rights Office of the High Commissioner. Convention of the Rights of the Child. December 21, 1995. <http://www.ohchr.org/en/professionalinterest/pages/crc.aspx>.

child. Parents or, as the case may be, legal guardians, have the primary responsibility for the upbringing and development of the child. The best interests of the child will be their basic concern.²

Acknowledging that the nature of a family's composition can vary, this paper focuses on the influence that a traditional male/female marital role has exerted on post-divorce family dynamics, societal expectations, and legal obligations where the child's legal family is comprised of a father and mother. In keeping with the UN's recognition that parents should share "common responsibilities" along with "primary responsibility for the upbringing and development of the child," as well as the duty to act in the "best interests of the child." Policy-makers at the global, national, and local levels would do well to enact measures that would hold both parents accountable for the financial support of their children, as well as their emotional, mental, physical, spiritual, and educational needs. This could be accomplished by the parents holding joint custody or noncustodial parents being legally responsible for the minimum amount of time spent with the child, known as visitation, or what courts often refer to as "parent-time."³

For decades, a lot of social science research and public policy—international, national, and local—has focused on the mother and children in post-divorce, single-parent homes. However, as social scientists turn their attention to the effects of a father's absenteeism on single-parent families, the father's rights and duties have begun to appear more frequently in legislation and research. Edward Kruk, Associate Professor of Social Work at the University of British Columbia is also a child and family specialist, called divorced fathers "a largely neglected population in professional literature."⁴ While fatherhood related research may have been neglected, there is legislature that has attempted to assert a father's right to parent-time, a child's right to care from both parents, or a single-mother's right to receive physical and emotional support for the child from the father—beyond financial contribution—that has almost been nonexistent, and in some respects—taboo.

Beginning at the international level, the efforts to appeal to lawmakers to protect, promote, and when applicable, mandate fatherhood has been controversial. The UN Convention on the

²Ibid.

³Utah Governor's Commission for Women and Families. *Utah Women and the Law a Resource Handbook*, 3rd ed. Provo, Utah: Profile Media, 1998.

⁴Kruk, Edward. "The Disengaged Noncustodial Father: Implications for Social Work Practice with the Divorced Family." *Social Work* 39 (1994): 15-25.

Rights of the Child was opened for signature on September 20, 1989 and ratified on September 2, 1990. Of the 196 states needed to ratify, the United States was the only standing member of the United Nations at the time that refused to sign the treaty. In 2008, with the treaty still not ratified by the United States, Barack Obama called the United States' absence from the ratifying body "embarrassing."⁵

Opponents to the treaty came primarily from right-wing Christians. Among them was Michael Farris, founder of the Home School Legal Defense Association, who worried that "a child's right to be heard would allow him or her to seek government review of every parental decision with which the child disagreed."⁶ Farris's concern was not only extreme-case thinking, it dismissed the benefits that the child stands to gain from having his or her rights upheld by the treaty. Through placing more importance on upholding libertarian parental freedoms, than protecting basic human rights of ensuring that the most vital needs are met. The frustrations with legislation at the international level, have mirrored those at the national and local levels as well.

In 2016, Senator Tom Lee of the Florida State Legislature "softened" the wording of a personally introduced bill that would "direct courts to assure that it is in the best interest of the child to have equal time-sharing between parents."⁷ Primary opposition to the bill came from two women's groups, the National Organization for Women, and the Florida League of Women Voters.⁸ Efforts to support joint physical custody have been shut down by those who fear that such arrangements would leave the child unprotected from possible abuse and neglect by the non-custodial parent.⁹

While it is acknowledged in cases where there has been documented abuse and neglect, enforced parent-time would not be in the best interest of the child. To disregard the child's need for

⁵Coller, Andie. "Parental rights: The new wedge issue." *Politico*, April 8, 2009. <http://www.politico.com/story/2009/04/parental-rights-the-new-wedge-issue-021041>

⁶Coller.

⁷Judiciary Committee, The State of Florida, Senate, Family Law (Bill CS/SB/668), April 2016, <https://www.flsenate.gov/Session/Bill/2016/0668/ByVersion>.

⁸Kennedy, John. "Florida alimony, child custody changes heading to Gov. Scott." Palm Beach Post Capital Bureau, March 8, 2016. <http://www.mypalm-beachpost.com/news/state--regional-govt--politics/florida-alimony-child-custody-changes-heading-gov-scott/7rAlIT5h6MRnfq8BJnTpO/>.

⁹Maccoby, Eleanor E. and Robert H. Mnookin. *Dividing the Child: Social and Legal Dilemmas of Custody*. Cambridge: Harvard University Press, 1998.

time with both parents, or as stated in the Convention on the Rights of the Child: “the right to maintain on a regular basis, save in exceptional circumstances personal and direct contacts with both parents,” because of an exception rather than the norm, is to overlook the benefits that legislation promotes, protects and even mandates paternal parent-time, when abuse and neglect have not been documented.¹⁰ This could bring harm to the father, mother, and child. In fact, there are some cases where the child may be more vulnerable to abuse from the mother when physical and emotional support from the father is not present, due to the added pressures of raising a child without co-parent support.

It is possible that divorcing spouses could exploit the idea of the best interest of the child in order to avoid the emotional stress that accompanies a joint custody agreement.¹¹ Eleanor Maccoby and Robert H. Mnookin, authors of *Dividing the Child: Social and Legal Dilemmas of Custody* write:

Advocates of “frequent and continuing contact” with both parents, while acknowledging the risks of loyalty conflicts, feel that such risks are outweighed by the risks of not seeing a divorced parent. They have pointed to the profound grief and sense of abandonment children can experience over the loss of a beloved parent, and the damage such relations can do to normal development.¹²

While opposition to legislation regarding father’s rights has been largely seen as a feminist movement, such opposition fails to see the burden that is placed on the mother when post-divorce parental roles continue to prescribe to traditional male-female marital roles, such as, the father is responsible for meeting the financial needs, and the mother cares for the educational, social, and physical needs of the child. In reality, the single mother is left to assume both roles—attempting to compensate for the post-divorce, diminished household income, while taking on the parental duties of the absent parent.

In post-divorce, the courts may award the mother a determined amount of alimony along with child support that the father is legally required to pay. While it may feel like a substantial sacrifice to the father, who no longer lives with the mother and child. The support will rarely allow the mother and child to approach the same standard of living they enjoyed pre-divorce, nor will it allow for unexpected needs and emergencies. The mother could easily accrue debt to meet basic needs and reasonable

¹⁰United Nations Human Rights Office of the High Commissioner.

¹¹Maccoby, 285- 286.

¹²Ibid.

wants of the child. If the marriage followed traditional mother-at-home, father-at-work patterns during pre-divorce, then the post-divorce circumstances could be even more challenging for the mother and child, than for women who established careers during their marriages.

Ruth Sidel, author of *Unsung Heroines, Single Mothers and the American Dream* writes "Single mothers are frequently forced to work part-time either because they need to be home to care for their children, or because the jobs available at their skill level are part-time."¹³ Having a lack of support from the absent co-parent will increase the difficulty of the single mother in her efforts to begin a career that will adequately provide for her family's financial needs, healthcare, and retirement benefits, as well as be personally fulfilling.

In the United States, social programs such as, Temporary Aid to Needy Families, Medicaid, Women Infants and Children, and Food stamps, are available to assist single parents. While these programs are lifesavers to millions of families, they maintain the family to crisis mode through limiting the mother's employment opportunities, as she must constantly calculate whether earning too much will make her ineligible for valuable programs that have benefits that outweigh the extra earnings. Furthermore, families must endure what Ruth Sidel calls the often "humiliating investigation into their financial status, their work status, and their personal lives endured by generations of poor women in the United States."¹⁴ It leads one to wonder if a portion of these government resources might be better spent ensuring substantial parental participation from both parents, rather than paying to compensate for their absence.

Too often, one parent, more frequently the father, is absent from parenting because, his career will not permit him to live near his family. It is difficult to determine whether there is an actual obligation to an employer where the father is legitimately irreplaceable, or if this is a personal choice to let his career take precedence over his parental duties. What activities should be allowed to take precedence over the fulfillment of parental duties without being considered negligence? Utah law states that "crimes against children include willful neglect, abandonment, or other behavior that might contribute to a child's delinquency."¹⁵

When a father has no legal obligation to be present in a child's life, the burdens are passed on to the custodial parent, the com-

¹³Sidel, Ruth. *Unsung Heroines, Single Mothers and the American Dream*, University of California Press Berkeley, 2006.

¹⁴Sidel.

¹⁵Utah Governor's Commission for Women and Families, 44-45.

munity, state, and nation. The effects of the father's disengagement continues to show into the child's adult life and perpetuate negative patterns in future generations. A study of adolescents with eating disorders showed that when a father was absent, distant, or disengaged from a young woman's life, the girls displayed more frequent signs of "low self-esteem, self-degradation, fears of sexuality, and a general inability to master the developmental tasks of adolescence."¹⁶ Currently, divorce laws as they are understood, do not do enough to mandate paternal involvement, mothers are set as the default—prone to compensate for an absenteeism that current laws do not recognize as negligence. Despite the research that demonstrates that fathers are crucial to a child's emotional and intellectual well-being, fathers are viewed—at best as excusable, and at worse—better-excused.

Social scientist, Edward Kruk disapproves of this trend. He writes, "Fathers' attachment bonds with their children can no longer be seen as secondary."¹⁷ He warns that "more than half of all noncustodial divorced fathers gradually lose all contact with their children."¹⁸ According to Kruk, studies done by Wallerstein and Kelly in 1980, and Hetherington et al. in 1976 revealed that "the closeness of the pre-divorce relationship between the father and the child is no indicator of whether or not the father will continue to visit the child post-divorce."¹⁹ He writes, the Hetherington study:

identified a small group of highly involved and attached fathers who, as a result of the pain of seeing their children only intermittently in a visiting relationship after divorce, chose to cease contact altogether...Those fathers most attached to their children before divorce are most likely to suffer the negative effects of the loss or absence of their fathering role.²⁰

These studies reveal that paternal absenteeism could be considered more a function of post-divorce custody arrangements than pre-divorce relationships. In the long term, laws that mandate paternal involvement, should benefit the father emotionally as well as the single mother, and child. Further, the father should benefit financially, as he will see a better return on the investment he is making in his child's life, and should feel a de-

¹⁶Maine, Margo. "Engaging the Disengaged Father in the Treatment of Eating Disordered Adolescents." November 1, 1985. *ERIC*, EBSCOhost.

¹⁷Kruk.

¹⁸Ibid.

¹⁹Kruk.

²⁰Ibid.

creasing monetary burden as the single mother becomes more capable of providing for the child.

In the *Utah Women and the Law; a Resource Handbook*, the requirements that enable a father's rights to have his interest in his children constitutionally protected are listed. The father must provide appropriate medical care and financial support, establish paternity, and have contact with the child.²¹ Contact is an essential aspect of parenting. While that seems like an obvious assertion, it is difficult to see how it has been protected or enforced by law. The Resource Handbook states:

The primary responsibility for child support rests with the parents and cannot be contracted away. Failing to support a child is a crime, punishable by jail, and/or a fine. It can also be a civil offense, in case of divorce, since a court will have ordered support.²²

While financial support is essential in post-divorce families, and should be mandated by law, resources that would support a single mother who is not receiving physical and emotional support for the child are notably absent. For example, the handbook states:

If your husband has been ordered to pay support and does not do so, you can take him back to court, where he will be ordered to pay. If you cannot afford to hire a lawyer to help collect back child support, you can apply to the State Office of Recovery Services for help.²³

Similar resources are currently unavailable, or not readily available, to women who are not receiving parent-time support from their co-parent.

Edward Kruk writes, "By not defining the post-divorce family system in terms of a continuing interdependence of mothers, children, and fathers, social workers and others may be contributing to the erection of barriers to the post-divorce father-child relationship."²⁴ This interdependence must acknowledge the need for physical and emotional support from both parents.

The mountain state of Utah has been attempting to overcome its reputation for gender bias. Recently, a handful of bills have been introduced that intend to protect, and in some cases establish paternal rights. In 2012, Utah Representative Ryan Wilcox introduced House Bill 88, which stated that "in custody decisions, courts may not

²¹Utah Governor's Commission for Women and Families.

²²Ibid.

²³Ibid.

²⁴Kruk.

discriminate against a parent due to gender, race, color, national origin, religious preference, or age.”²⁵

The same year Utah Representative Gage Froer sponsored House Bill 107, which suggested that the preamble “joint legal and physical custody of children in a divorce or separation is in the best interest of the child.”²⁶ Joint custody would be presumed, but parents would be permitted to contest that in court if there were circumstances that necessitated it.²⁷ These bills, controversial as they may be, particularly to some women’s organizations who fear that they may trample mothers’ rights, can also be understood as opening doors to laws that can help women break through the traditional societal default caregiver roles, which will eventually lead to the poverty traps aforementioned, as local, national, and international laws do better to acknowledge men’s rights to be active participants in their children’s upbringing post-divorce.

We can be in a better position to demand accountability for the physical and emotional support that children need, even if that support means that divorced spouses must modify career goals, and help them make child-centered life choices. Policy makers could make resources available that would help families negotiate a mutual agreement for parent-time arrangements, along with providing legal resources to single parents whose divorced spouse is not complying with their parent-time agreement. These agreements would take into consideration careers that necessitate travel, and even long-distant living arrangements as well as assure that both parents are amenable to the arrangement. Through such an arrangement it would allow each parent an equal opportunity to progress toward a sustainable lifestyle, and assure the child’s needs are met.

The United Nations Convention on the Rights of the Child is a human rights standard that leaders in the United States should ratify. This would demonstrate the best interest of children’s rights and would be intrinsic to all laws, along with the degree to which they are enforced. Included in those rights, is the right to be cared for (when possible) by two mutually responsible parents. Utah’s recent legislation for paternal-rights supports that right. Laws which explicitly mandate parent-time can be the next step. Increased paternal involvement will help contribute

²⁵Brubaker, Ladd. “Fathers’ Custody Rights Getting Attention in Legislature.” KSL, February 20, 2012. <http://www.ksl.com/?nid=960&sid=19302544>.

²⁶Ibid.

²⁷Ibid.

to the sustainability of the inter-mountain west, as it yields more effective nurturing of the child and allows more time for both parents to pursue personal and community economic development.

NOTES

Footnote #9: Maccoby, Eleanor E. and Robert H. Mnookin. *Dividing the Child: Social and Legal Dilemmas of Custody*. Cambridge: Harvard University Press, 1998. "Our concern is that because of difficulties related to the spousal divorce, "There are two types of joint custody: legal and physical. With joint legal custody, even though the child may reside with one parent, the mother and father have equal rights to make decisions about the child's medical care, religion, and education. Joint physical custody empowers both parents to share a day-to-day responsibility for the child's care, and carries with it the idea that after divorce the father and mother should have roughly equivalent roles."

Footnote #11: Maccoby, Eleanor E. and Robert H. Mnookin. *Dividing the Child: Social and Legal Dilemmas of Custody*. "Our concern is that because of difficulties related to the spousal divorce, a significant number of custodial mothers might put an end to paternal visitation in circumstances where the children would not in fact suffer long-run harm by reason of parental conflict, and where they would receive important long-run benefits from a continuing relationship with their father."

Page paragraph starting with "When a father has..." "Research exploring the amount of contact between children and their non-resident fathers have suggested that a decline in father involvement may increase the likelihood of delinquent behavior in adolescent years (Coley & Medeiros, 2007). Similarly, Flouri and Buchanan (2002a) found that lack of father involvement was a risk factor for delinquency in boys, and Harper and McLanahan's (2004) study revealed that adolescent boys who grew up in a father-absent home were more likely to be at risk of incarceration. Other research also has found that children who grow up in father-absent homes experience a sense of abandonment and may feel unloved by their father (East, Jackson, & O'Brien, 2007)." East, Leah, Debra Jackson, Tamara Power, Andrew Woods, and Marie Hutchinson. "Holes in my Memories': A Qualitative Study of Men Affected by Father Absence." *Issues in Mental Health Nursing* 35, no. 8 (2014): 604-612. EBSCOhost.

Footnote #18: Kruk, Edward. "The Disengaged Noncustodial Father: Implications for Social Work Practice with the Divorced Family." *Social Work* 39 (1994): 15-25. "In nationally representative sample of U.S. children ages 11 to 16, it was found that 52 percent of children had no contact with their fathers in the past year or longer; only one-third averaged monthly or more contact (Furstenberg, Nord, Peterson, & Zill, 1983).

SECTION III

INTERNATIONAL MOUNTAIN ISSUES

REBUILDING SHREE SHAKTI PRIMARY SCHOOL: AMARAI-4, GORKHA, NEPAL

By: Sagar Basnet

Sagar Basnet is a senior at Utah Valley University, majoring in Business Management and Sociology. He is originally from Nepal, and currently lives in Provo, Utah. He enjoys reading historical non-fiction and autobiographies, working out, hanging out at Coffee Shops, being with friends, hiking, snowboarding, mountain biking. Sagar has been a member of the UTMF since 2014. This submission was Sagar's senior thesis for his Integrated Studies program.

"Nepal is small country landlocked by China and India, well known as the 'Land of Himalayas.' It has more than 240 peaks over 20,000 feet above the sea level, including the highest peak in the world, Mount Everest. Nepal rests on a major fault line between two tectonic plates - The Indian plate on the south and the Eurasian on the north."¹

Nepal lies in an active seismic region. "The powerful and devastating Gorkha Earthquake of April 25, 2015 with magnitudes of 7.8 and aftershocks of up to 7.3 magnitudes on May 12, 2015 is the most unforgettable event in the history of Nepal. Its epicenter was 25 miles northeast of Gorkha bazaar, in a small village named Barpark. The earthquake killed 8,800 people, injured 30,000, destroyed world heritage sites, and left millions in need of food, clean water, and shelter. Impoverished Nepal was left with many irreparable damages. The people experienced more than 400 tremors of magnitude-5 and below after the major quake."²

The media put most of their attention on the destruction of capital city, Kathmandu. However, remote areas of Nepal were affected the most. Whole villages had been damaged in some regions. There are still communities that haven't received any aid or assistance, regardless of the hundreds of organizations that are there to help the earthquake victims.

According to economic analysts: "Nepal is a developing coun-

¹CNN. "Nepal Fast Facts." *CNN Wire*, September 2, 2016. <http://www.cnn.com/2015/07/10/asia/nepal-fast-facts/>.

²Mitra, S., Himangshu Paul, Ajay Kumar, Shashwat K. Singh, Siddharth Dey, and Debarchan Powali. "The 25 April 2015 Nepal earthquake and its aftershocks." *Current Science* 108 no. 2015. doi: 10.1938-1943.

try with low income ranking 145th among 187 countries according to the human index reports (2014).”³ Nepal is not just poor; it is very poor.

Because of the earthquake I proposed to rebuild Shree Shiva Shakti Primary School located in the remote area of Gorkha, Nepal. After the earthquake children were studying under the tent in Nepal and were losing hope. No one could imagine building a new school until I went there with my proposal. I did this because, I value the importance of knowledge and education. I traveled 8,000 miles to the USA from Nepal to further my own education, due to the level of education in a nation mirrors the living index of the people and the nation as a whole.

SOURCE OF INSPIRATION

After the shocking news of the earthquake in Nepal, I was very sad and depressed, knowing that I belonged to this community once, and still consider myself very much a stakeholder. A few minutes after the earthquake, I was able to talk to my father over the phone. He was breathing very heavily when he said, “We are safe for now.” The phone got disconnected after about ten-seconds of talk time. I tried calling back, but I couldn’t get through to him for another 48 hours. The earthquake interrupted cellular service. An hour after the earthquake, I learned that the epicenter was Gorkha, my hometown, where I was born and raised.

The earthquake occurred during the final week of spring semester. I was not able to focus on my studies. Social media sites like Facebook, Twitter, and different news channels were giving updates every minute about the earthquake. After the quake, Facebook pages of Nepali citizens and media about Nepal were filled with earthquake happenings for four weeks. Watching the news made me more depressed. Pictures and videos broke my heart. I was helpless because I was not there. The only way I could help people was to donate money for rescue and relief operations, which I did.

My physical body was in the US, but my mind was in Nepal. The bitter truth is that the government barely functions there. After the earthquake, the Government’s humanitarian relief aid was not sufficient or well planned. Thus, many other countries and international agencies like the US, Australia, China, U.K., E.U., Canada, Japan, UN, USAID, Oxfam, and etc., were very responsive with search, rescue, and relief. Then on May 10, 2015,

³United Nations Development Programme. “The 2013 Human Development Report.” 144–147. <http://hdr.undp.org/en/2013-report>.

I saw the post on Twitter “UNICEF: 1 million children enrolled in school before earthquake could now find they have no school building to return to,”⁴ along with a picture of kids studying under the temporary tent, and this became my inspiration to rebuild the school.

I called my friend Ramesh Thapa and asked him to survey the schools in my town. After three days, Thapa sent me pictures of Shiva Shakti Primary School, which was completely destroyed. My heart was shattered after receiving those pictures of the school. I discussed rebuilding the school with Dr. Gregory Jackson and Dr. Wayne Hanewicz, from the Department of Integrated Studies at Utah Valley University as being my senior project advisors for my program. I was very optimistic that rebuilding the school was an achievable goal.

Before I proceed to explain the process of rebuilding the school, I am going to provide some information about the educational structure, culture, economic and geographic challenges, health-care, and the local government in Nepal, since no social action can be detached from its surrounding community. For any outsider it's important to know about the socio-cultural values of the area before he/she steps onto the ground for any research or development.

EDUCATIONAL STRUCTURE

Education in Nepal consists of five years of primary education, three years of secondary, lower secondary, two years of upper-secondary, and two years of higher secondary. Schools may be community-funded, run by a Non-Governmental Organization (NGO), or by the government of Nepal. There are also private institutions. The curriculum for the primary school covers English, mathematics, science, Nepali, and social studies. The education sector of Amarai is in vulnerable condition, as 74 percent of the population of the village are uneducated. Only few have attended high school education or college.

The Shree Shiva Shakti Primary School is located in a small village named Amarai-4. It was established in 1977, by the government of Nepal and is a public school. The main goal of the school was to educate children ages 4-12. Since its establishment, it has educated more than 5,000 children from that community.

Children from nearby villages hike 30-45 minutes to get to school. After completing their primary education at Shree Shiva Shakti, the children go to a nearby middle-school about another

⁴UNICEF. Resources for Media. <https://weshare.unicef.org/Pack-age/2AM4080FDL1J>.

er hour hike (1.5 km away from their village) from Shiva Shakti School. The children of Nepal struggle for the right of gaining an education. They need more schools in the area and it is a real catastrophe when the existing ones are affected by natural calamities.

The Shree Shiva Shakti Primary School is 3.5 kilometers away from Gorkha Bazaar, Nepal and 20 miles southwest of the epicenter of the earthquake. Since the earthquake, the situation has grown worse due to lack of funding and resources. After the earthquake, the number of children going to school has decreased enormously, since the school was destroyed by the earthquake. Currently the school is serving only 42 students that study under a tent, which gets very hot and humid during the summer. Due to rain during monsoon seasons, water enters the classroom through the vent of the tent, making the classroom muddy, slippery and dangerous.

CULTURE

Ethnic Identity

Nepal has an estimated population of 27.8 million people. It is a garden of multicultural and multilingual people. There are 40 different ethnicities, and very diverse in culture. Magar, Tamang, Lama and Brahmin are four different groups who reside within one kilometer around of the newly rebuilt school. They all have their own distinct culture, language, and religion. Magar, Tamang and Lama People densely populate that region. They all practice Buddhism and Hinduism. According to the class division of the society, Magar, Tamang, and Lama People are considered as a low caste in a Hindu dominant state and society.”⁵

Nepal, while geographically small, is heterogeneous. Thus, while undertaking a community project, one needs to keep this characteristic in mind.

Language

Brahmin people in the region speak Nepali, but they also read and write Sanskrit. When it comes to practicing Hindu religious activities, the ethnic group of Brahmins are the head of the Hindu temple. They are priests in

⁵Bennett, Lynn, Dilli Ram Dahal and Pav Govindasamy. *Caste, Ethnic and Regional Identity in Nepal: Further Analysis of the 2006 Nepal Demographic and Health Survey*. Calverton, Maryland, USA: Macro International, 2008. <https://dhsprogram.com/pubs/pdf/FA58/FA58.pdf>.

most of Nepal's Hindu temples. The ethnic group of Magar speak 'Dhut Magar' as well as Nepali. They speak their language inside the house or in the community. Even though their origin is unclear, they are still considered one of the oldest tribes. The ethnic group of Tamang has language which is scripted in Tam-HinYig called Sino-Tibetan. The ethnic group of Lama People are high priests and they speak the Tibetan language.⁶ All these ethnic groups speak Nepali as well.

Traditional Dress

Each tribe has their own official dress, which is worn during special occasions. The Magar have a very unique style of dress. Most often, they wear loin cloths and bhotos (shirts with sleeves), or shirts and coats. The women also wear loin cloths called dhotis. They often adorn themselves with fulis (flower-like ear ornaments) in the middle parts of their ears, necklaces made of glass beads and silver Indian coins. Some aspects of western style clothing are slowly becoming more common. Brahmins wear daura suruwal and Dhaka topi. Lama people wear waistcloths, upper and outer robes. Tamangs wear similar designs to Lamas but, they do have to be consistent colors. Costume is gendered and mirrors community values, occupation, and aspirations.

NEPAL'S DEMOGRAPHICS

Economic/ Geographic Challenges

About 80 percent of the people in this village are actively engaged in agriculture. The topography of this region is hilly and cultivation has always been a challenge. For generations they have practiced terrace farming. They use traditional farming techniques, production, consumption, and distribution of goods produced to serve their community. Every household has a piece of farmland along with cattle. They still use plow, yoke, sickles and spades as their farming tools. They grow seasonal crops like rice, wheat, and millet. Barley is very common and also seasonable vegetables like tomato, onion, ginger and garlic.

Lately, there are job opportunities in Middle Eastern Countries (Saudi Arabia, Qatar, and Bahrain) and South East Asian countries (Malaysia, India, and South Korea) that have attracted the youth of Nepal. People working in those countries often send money back to Nepal. This tradition of going abroad and sending money has aided 60 percent of Nepal's economy for the last ten years and continues to grow. My current project, was supported by a few Nepali Citizens working abroad.

⁶Ibid.

Nepal has both geographic and economic challenges, with being hilly and mountainous and little or no governmental budget for building roads. There is a lack of infrastructure in Nepal, mostly in the hilly and mountainous regions. There is a lack of distribution of food due to the infrastructure. In many rural areas, people eat only potatoes supplemented with small amounts of green vegetables and rice.

Healthcare

The health of the people living in this region suffers from lack of access to healthcare. “Gorkha district has only two hospitals. One of them is run by the government and the other was mostly run by United Missions to Nepal. They have stopped their operation after 2001.”⁷ Even though each Village Development Committee (VDC) has a health post, people with major issues have to go to other nearby towns for their health services. The roads are in poor condition and many villages don’t even have road access at all. This prevents effective allocation of medical staff and medical supplies throughout the country. Amarai village has one Sub-Health post, which has been rebuilt after twenty years, but there are no workers because, the government is in the process of recruiting a team. Each health post has one health assistant, and one nurse in general that serves 500-3000 people in the VDC. Most of these health posts offer primary care only.

Local Government

Nepal has a two-tiered local governance system, recognized by a constitutional and legislative frameworks. The upper tier is the district level government called the District Development Committee (DDC). Municipalities in urban localities and Village Development Committees (VDCs) in the rural localities are the lower tier of LGIs. The 75 DDCs, 58 municipalities and 3,915 VDCs (CBS, 2002) in composite form constitute the entire local government of Nepal. Each VDC area is divided into nine wards, while a municipality is divided into a minimum of nine wards. The numbers of wards vary depending on the size/area and population. Each of the ward of the VDC or municipality has a ward committee (WC) made up of five popularly elected members, including one woman at least and a ward chairman.⁸

⁷Nepalmed. Amppipal Hospital - Nepalmed - English Language Version.” Amppipal Hospital - Nepalmed - English Language Version. http://www.nepalmed.de/ENG/projects_amppipal.html.

⁸Asia Foundation. “A Guide to Government in Nepal: Structures, Functions,

The Amarai village has been recently added into Gorkha Municipality-4.

CONSTRUCTION OF THE SCHOOL

Fund Collection

To collect the funds for the project, I started a campaign on [www.gofundme.com](https://www.gofundme.com/rebuild-schoolnepal) (<https://www.gofundme.com/rebuild-schoolnepal>). In the beginning, my goal was to raise fifteen thousand US dollars. Initially, I was the only donor before a small circle of my friends donated some funding. The first week, I only collected \$875. For an entire month there were no changes in the fund collection. During that time period, every day when I woke up, and the first thing on my mind was how was I going to collect the funds. I was really frustrated until the second week of June. On June 15, 2015, I checked my email after waking up and I was totally surprised by an email notification saying an anonymous donor had donated \$5,000. First, I thought this is not right. I even called the crowdfunding help support to confirm. I was very overwhelmed that whole day saying, “where there is a will, there is a way.” I became more hopeful about collecting funds. On July 1, 2015, I left for Nepal with 39 percent of the targeted funds collected. I hoped to collect the remaining amount after I started working on the school.

Construction of Cost-Effective Earthquake-Resistant Building

Rebuilding a cost-effective earthquake-resistant building was the goal of the project. Finding a design that was earthquake-proof along with building materials and labor that was needed to complete this project was an overwhelming task for me. Due to my limited funds I needed to reduce costs and increase sustainability, which I found was over my head, until I connected with an engineer named, Nikesh Maharjan.

Meeting with School and Village Committees

On August 17, 2015, I arrived at the Shree Shiva Shakti Primary School to meet with the local committee of the village and school committee members. They were very supportive and excited about the proposed project. The meeting lasted for about two hours. We discussed how to start rebuilding the school; I talked about the finances that had been collected so far (\$5803 through GoFundMe). Even though we needed more money, I tried to remain positive that additional funds could be raised after the project started. Through providing updates to donors on

GoFundMe, as well as my mentors at Utah Valley University. I felt that taking action was the most important factor for raising additional funding. This was risky and very challenging. During the conversation with the locals, they asked what would happen if additional funds weren't received. They even suggested that I collect the funds before I start. I convinced them I would manage it anyway. I gave my word that I would complete my project whatsoever.

In my opinion, after I explained my financial situation they were more confused and lost their confidence that the school would be rebuilt. A week after the meeting, one of my school friends from the same village, named Kapil Pokhrel called and said he was willing to clear the rubble. He would rent the excavator with his own money. I was very surprised and excited at the same time that he was willing to help. This energized me in believing I could achieve my goal.

Community Involvement

Like an old English saying, "Give a man a fish, and you feed him for a day; show him how to catch fish, and you feed him for a lifetime," the proverb reflected the way we brought the community together for this project. We took as much as help as we could from local skilled labors, as well as teaching them new skills to rebuild an earthquake-proof building. These efforts would bring the cost down and the villagers would be actively involved and reunited in rebuilding.

It was on August 27 when my friend Pokhrel rented the excavator to clear the rubble. A group of 13 people, both men and women from the community, came to help us move wooden planks, benches and chairs, which were not buried under the rubble and could be reused while rebuilding the new school. We did not want to interrupt the operations of school during construction and salvaging, so we moved the temporary tents that the school was operating out of to another location. The community worked from 9:00 am, and by 12:30 pm we had put aside all the salvaged materials. Then, it was the time to bring in the big machine. The excavator started demolishing the walls. With the approval of the school committee, we had planned to dig 10 feet towards the hill, so the school would have space away from the hill it was leaning into to prevent damage from landslides.

Designing the School

Since Day one, the foremost goal of the project was to rebuild an earthquake-resistant building (up to a degree of precaution). This was very challenging, since this process was fairly new. I

knew the government officials were working on new earthquake proof designs, but governmental procedures are slow in Nepal. Sometimes it takes several months just to get a National Identity card. After waiting over a month to hear back from the government, I spoke to other civil architects in town who were working on their designs. I waited for about 45 days, but it was not a good idea to wait any longer. In search of designs, I came across Nishesh Maharjan, a civil engineer, whose design was approved by the government. Maharjan was very friendly and helpful. Within a week he had my school designs ready. Maharjan also gave me information about a small family of builders who are proficient at building his designs.

In the beginning, I thought it would be a better idea if the villagers would be able to do this, but no one was familiar with the new designs. The villagers said they could find water supplies for construction, and prepare meals for the workers during construction, whereas buying groceries was my responsibility. After doing detailed research about feasible construction in the end, I had to go with a builder named Lumbini Structures and Engineering works, that Maharjan recommended. In the end, the school was designed to hold 100 students in four classrooms, with each classroom consisting of 240 square feet.

The Foundation

On September 24, 2015, which was three weeks after clearing the rubble the ground was ready for the new foundation of the school. We started construction of the foundation using tools such as, muck picks, woven baskets, and shovels. These tools were used to dig up the ground about 2 feet under for the foundation of the building.

It took four days with the help of six people that worked eight hours a day to dig up the ground and get it ready for the metal frame attachment that included DPC (damp proofing construction).

Iron Metal Frame

The frame of the school was built with metal. We received our ready-to-install metal frames on September 28, 2015. The sizes were as designed by Maharjan and his team. As mentioned above, we had to follow the codes and conduct of earthquake-proof design and follow the detailed instructions of the engineers. All metal frames were mostly made up of detachable screws, which were easier to assemble on the site.

The concrete workers were local and were not skilled in the new metal design for earthquake-proof structures. The metal

frame workers had different skills than concrete workers and were experts in their field. Lumbini Construction provided five metal experts that collaborated with the concrete workers to show them how to work the new design. Most of the metal was ready to assemble, but a few welding jobs needed to be done at the site. To do so, we had to get the direct current from the electricity poles that passed through the compound. The total quantity of metal used was 2398.6 kilograms.

Zinc Roof Installation

After the structure was framed on October 2, 2016, 56 aluminum zinc-coated sheets, also known as Corrugated Galvanized Iron (CGI) measuring 24 Gauge were installed as the roof of the school, encased around a CGI plate. We decided to use CGI sheets because they are easily found and are transportable, along with being a long-lasting roofing material. Since the roof is generally the most susceptible to nature, a strong material was necessary to protect those studying below. Furthermore, its light weight ensures that the stress put on the pillars is at a minimum.

Prefabricated Wall Board Installation

On October 3rd, prefabricated board were installed. It took three days to finish the installation. The wall boards were placed on a brick wall that was three feet high, which was above the DPC level. A total of 40 pieces of prefab-board were used to build the walls. A brick wall of three feet was designed to keep the school cool during the summers and warm during winter. The prefab boards were sized to make the exterior of each panel, as it is an exterior wall.

Damp Proof Floor

On October 10, 2015, a local team of seven people started building the damp proof concrete foundation. It was made of materials like stone, cement, pebbles, and sand. The height for the DPC floor was 1.5 feet with iron frames jammed in between to make it stand firm and hold tightly into the ground. Right above the level of DPC we had a brick wall of 3 feet.

Brick Installation

We used approximately 3,800 bricks. Brick is a proven insulator, plus it is very accessible in the area and needs less maintenance.

Painting Day

On October 27, 2015, we started painting the exterior and the

interior of the school with the help of four local painters. After we finished the DPC flooring, we had our biggest festival called dasain. It is celebrated for 10 days nationally, thus the construction was halted for two weeks.

Inauguration/ Handing School to the Community

On November 16, 2015, the school organized an inauguration and handover day of the new school building. Participants included committee members, villagers, students and parents, which totaled around 60 people. Everyone looked so happy and excited about the new school. I was so happy to see the community filled with new hopes and energy after the earthquake. I decided the school kids could cut the ribbon and be the first ones to enter the classroom. It was their school and they were the ones who would be attending it.

FUTURE PLANS

I am working on a project to find students who want an engaged learning opportunity as volunteering to go for 6-8 weeks every summer and teach English at Shiva Shakti, as well as, helping the local community (Amarai) with sustainable living, farming skills, and technology development in rural areas. This will provide engaged learning opportunities to students and development of the community.

CONCLUSION

After the school was built, the whole community was re-energized with new hope. I knew that I could not rebuild each and every school that was devastated by the earthquake, but this effort of mine had a positive impact among the earthquake victims of that community (Amarai, Gorkha) and the nation as whole. After putting in roughly 650 hours of work, I completed rebuilding the Shree Shiva Shakti Primary School. My contribution has expanded educational opportunities to earthquake victims, especially the kids who were away from school. Throughout the project, I learned about the community, cost-effective intervention, and social policy. I would like to thank all donors, mentors, media, and others who had helped me throughout the project.

FLYING TIGER ANGELS – US AVIATION AID TO CHINA DURING THE 2ND SINO-JAPAN WAR

By: Tyler Riffle

Tyler Riffle graduated from Utah Valley University with a degree in Aviation Science and an emphasis in Aviation Administration. Currently, he lives with his wife and three children in Omaha, Nebraska where he is conducting flying operations worldwide as a United States Air Force pilot. Aside from aviation, Riffle has a strong passion for language and culture. Between church service, exploring, educational pursuits, and professional assignments, he has spent several years on the ground with people all over Asia. He is fluent in Mandarin-Chinese and enjoys connecting with people from all over the world. He is currently pursuing a master's degree in International Relations and ultimately plans to combine his language and cultural skills with his passion for aviation and business.

December 17, 1903, the Wright Flyer made the United States of America the birthplace of modern day aviation. Within a few short decades the airplane, still in its youth, was sent to war. During these early air battles the United States military aviation extended a helping hand beyond its own borders in defense of other nations. Brave American aviators formed legendary groups of volunteers such as the Lafayette Escadrille, American volunteers to France during WWI; the Yankee Squadron, who volunteered to fight the Nazi and Fascist in the Spanish Civil War; and the Eagle Squadron, a group willing to fly with the Royal Air Force when Great Britain was in most desperate need of help during WWII. In addition to helping the western world during these turbulent times the United States, the youngest nation, extended its wings to help one of the oldest civilizations, China. The United States and China have not always been on the best of terms, the two nations are currently engaged in economic and political jousting, while history brings to mind the pseudo wars fought between the two nations. However, if we look more closely, history also shows that American aviation played a significant role in China. The American aviation aid to China, leading up to the legendary American Volunteer Group, not only helped the development of Chinese aviation but, it also saved China from a fierce Japanese invader. Giving hope to the Chinese and, Americans, and giving hope for a future where the Chinese and US governments and military could further develop a relationship of mutual respect and cooperation.

The story of the Flying Tigers begins long before the United States entered the second world war. It is alleged that in 1927, Prime Minister Baron Tanaka Giichi of Japan, laid out a strategy in taking over the world to Emperor Hirohito. According to the US wartime film *The Battle of China* the Tanaka Memorial laid out a four step plan to conquer the world:

1. Conquest of Manchuria
2. Conquest of China
3. Establishment of bases in the Pacific
4. Conquest of the United States¹

The country of Japan was developing quickly but was restricted by limited resources. It built up a strong navy, army, and even developed a powerful and lethal air corp. In order to sustain the effort of imperialism and conquest, Japan needed land, resources, and people, which is exactly what China was to the Japanese. They had land, resources, and people. The authenticity of the Tanaka Memorial has been challenged by many scholars. Regardless of the authenticity of the actual document, history shows the steps that Japan took in expanding its kingdom.

THE JAPANESE INVASION OF CHINA

In the 1930's China was not as it is known today, as being unified under a single government. China was a country, but far from being a nation. Beginning in 1931 Japan took advantage of the divided, and therefore weak, China to begin expansion.² China was a relatively easy target at the time. The Japanese moved into Manchuria, an area of northern China, with little resistance and without a war breaking out. The era of Chinese dynasties ended in 1911 with the fall of the Qing Dynasty.³

The fall of the Qing Dynasty eventually lead to the establishment of a new republic, the Republic of China (ROC) lead by President Sun Yat-Sen. However, this new republic never fully united the people of China and by the 1930's there was a power struggle between Sun Yat-sen's predecessor Chiang Kai-shek of the ruling Nationalist Party and Mao Zedong from the rising Chinese Communist Party.⁴ In addition to the power struggle between these two political parties many areas

¹*Why We Fight: The Battle of China*. directed by Frank Capra. National Archives and Records Administration, 1944.

²Wasserstrom, Jeffery N. *China in the 21st Century What Everyone Needs to Know*. New York: Oxford, 2010.

³*Ibid*.

⁴Global Security. Chinese Civil War (1927-1949). <http://www.globalsecurity.org/military/world/war/prec-civil.htm>.

of China were ruled by local leaders or warlords.⁵ This political landscape gave the Japanese the perfect opportunity to sweep across China. Japan swept across much of northeastern China with little resistance. After taking over BeiPing, modern day Beijing, the Japanese government set up a puppet government ruled by the last Qing Emperor, Puyi.⁶ People in the south were not entirely preoccupied with the Japanese invasion in the north until the Japanese came knocking on their door.

Japan encountered its first major obstacle in 1937, as their occupation attempted to move south. The Japanese expected to move into Shanghai with the same amount of resistance as they had faced in the north. However, to their dismay the Chinese were more prepared this time and put up a fight. The Chinese resistance was valiant but, they were still no match for the powerful Japanese Army and Navy who riddled Shanghai from its own waterways. Shanghai fell to the Japanese and the Chinese paid for their valiant effort.

In September 1937, the Japanese Air Force employed a new type of warfare that was introduced that same year over Guernica in Spain where they lead a mass aerial bombing of a relatively defenseless population.⁷ The small air defense China did have, much of it was destroyed in the battle of Shanghai. The Japanese had a powerful and deep air arsenal that could be launched from land or sea and the Chinese air fleet was simple and outdated. China lacked an aeronautical industry and lacked the resources and experience to produce their own air defenses. After bombing the citizens of Shanghai the Japanese expansion turned towards the capital of the Republic of China, Nanjing.

The Japanese takeover of Nanjing is better known as the rape of Nanjing. During the invasion of Nanjing the Japanese employed brutal tactics including more aerial bombing, while adding the slaughtering and raping of Chinese citizens. According to a survey of recent Chinese history the Japanese killed an estimated 200,000 to 300,000 Chinese citizens and raped over 20,000 Chinese women.⁸

The Japanese taking control of the city of Nanjing, at the time seemed like a great victory and they defeated the Chinese spirit of resistance. The thing that the Japanese feared the most was China being united and standing together to resist their armies. One of the main goals from the rape of Nanjing was to tear the heart out of the Chinese people and render them as helpless prey.⁹ The true result from

⁵*Why We Fight: The Battle of China.*

⁶*Why We Fight: The Battle of China.*

⁷*Ibid.*

⁸Wasserstrom.

⁹*Why We Fight: The Battle of China.*

the invasion among many Chinese citizens was quite the contrary. These events gave Chinese leaders the fuel to unite the Chinese people against the Japanese invaders. It was a unification that had repeatedly failed before this point in history. The president of the Republic of China, Chiang Kai-shek, pleaded that, "the whole nation must rise as one man and fight these Japanese Bandits."¹⁰ China then made the lifeline decision to move its capital and all who would follow to Chongqing located in the west.

CHINESE EXODUS TO CHONGQING

The movement to Chongqing was a mass exodus of biblical proportions. The Chinese took all they could carry that would be necessary for their new lives in the west. They carried across China machinery and supplies on trucks, carts, boats, and their own backs. Their principle was to trade time for space. The Chinese military did whatever they could do to put space between the invading Japanese and the fleeing Chinese. As the Republic moved south they destroyed factories, roads, and bridges. They even pulled up railroad ties one by one as the last train passed through. By doing this they were creating space between them and the Japanese along with making sure there wasn't anything left behind for the Japanese.¹¹

After arriving in Chongqing, the Chinese made attempts to protect its citizens and infrastructure from the aerial threats that rendered them helpless in the Japanese air raids in Shanghai and Nanjing. One of their first efforts was to build bomb shelters in the nearby mountainsides and precious machinery was placed in factories below ground, away from the harmful bomb blasts.¹²

China was determined to remain a nation and they were willing to fight to survive. Their will was strong but, the Chinese military lacked in resources and experience against the Japanese war machine. China's air corps were extremely limited and they had inadequate ability to produce aircrafts and train pilots as well as not having the infrastructure required to support air operations.

The majority of China's military aircrafts were either outdated or they were a civil aircraft that was converted for military purposes. The outdated aircrafts were mostly comprised of World War I surplus planes that the Chinese government and fraction states, or warlords, bought up from the allied nations that eagerly sold them to balance peace time budgets.¹³ In addition to lacking materials and experience,

¹⁰Ibid.

¹¹*Why We Fight: The Battle of China.*

¹²Ibid.

¹³Xu, Guangqiu. *War Wings: The United States and Chinese Military Aviation, 1919-1949.* Westport, Connecticut: Greenwood Press, 2001.

the growth of China's airpower was further exacerbated by the China Arms Embargo of 1919.

THE CHINA ARMS EMBARGO OF 1919

During the period between the end of the Great War and 1919, China experienced a power struggle within its borders and more weapons of war were needed. However, the increased number of aircrafts being bought were not all going to the Chinese government. Aircrafts were being sold across the country to different warlords and factions. Warlords saw the power and significant advantage that aviation could give them over rival warlords. They readily purchased aircrafts from world powers such as the United Kingdom, Russia, France and the United States. Between the demands of the government, warlords, and fractions there were hundreds of thousands of weapons flowing into China.¹⁴

The civil war in China continued to escalate and in 1918, world powers began to worry. The United States took the lead in proposing an arms embargo to help prevent China from destroying itself. The British were the first to support the US proposition, recognizing that a stable China would make a better trade partner. The next year, on May 5, the British Minister Sir John Jordan presented the following arms embargo to the Chinese government:

The governments of Great Britain, Spain, Portugal, the United States, Russia, Brazil, France and Japan have agreed effectively to restrain their subjects and citizens from exporting or importing into China arms and munitions of war material destined exclusively for their manufacture until the establishment of a government whose authority is recognized throughout the whole country and also prohibit during the above period the delivery of arms and munitions for which contacts have already been made but not executed.¹⁵

With the arms embargo now in place it effectively stunted the growth and development of Chinese air power. However, the embargo did not completely stop China from importing aircrafts from around the world, including the United States.

The China Arms Embargo of 1919, specifically restricts importation or exportation of any war material destined for China. The United States defined that all aircraft, civil or militarized, as war material are thereby banned along with any aircraft, or aircraft parts from being exported to China. The British on the other hand did not maintain the same definition for aircraft as the Americans. The British viewed commercial aircraft as failing outside the arms embargo. Only a few months after the embargo took effect a British company, Vickers Lim-

¹⁴Xu.

¹⁵Ibid.

ited, entered into a sales contract with the Peking government for 100 non-militarized aircraft.¹⁶

The British Legation in China made the following statement regarding the importation of British aircraft into China:

It has been decided by His Majesty's Principal Secretary of State for Foreign Affairs that the importation of aeroplane for commercial purposes should not be regarded as coming within the scope of the 1919 arms embargo of the King's regents.¹⁷

Britain was not the only country unwilling to lose out on the economic benefits of exporting aircrafts into war-torn China. French companies continued to export large amounts of aircrafts into China during the 1920's, that were considered commercial in nature.¹⁸ This caused US companies that manufactured aircrafts to be upset with the Department of State. China remained one of the biggest potential markets for aircraft sales. The US aviation industry still had a lot of war surplus and wanted in on the lucrative sales to China. US companies, including Curtis, applied for permits from the US Department of State to sell commercial aircrafts to China, but these permits were denied.

The United States reluctance to import aircraft into China under the provisions of the China Arms Embargo was justifiable.¹⁹ The United States, in addition to other world powers, knew that a large portion of the so called commercial aircraft that were imported into China during the 1920's were being converted and used for military purposes. However under increasing pressure from US companies the Department of State began to consider granting permits for commercial aircraft manufactured in the United States.²⁰ The Department of State's political goal of a peaceful and united China eventually took a back seat to economic pressures as the US government lifted the embargo on commercial airplanes in 1928.

The lifting of the embargo on commercial aircraft still left the China Arms Embargo in affect. China was now able to legitimately purchase commercial aircraft but was still unable to openly build up an air force. The Republic of China was most affected by the arms embargo. It was not until the complete lifting of the China Arms Embargo in 1929 that the Nanjing government was able to begin to consolidate its airpower and attempt to openly modernize their air force.

From one perspective, the China Arms Embargo had failed to keep war machines out of China during a time of turmoil. The failure of the embargo can be attributed to China's great demand for aircraft and the

¹⁶Ibid.

¹⁷Ibid.

¹⁸Xu.

¹⁹Ibid.

²⁰Ibid.

lucrative business of meeting that demand from the same nations that drafted the arms embargo. However, in spite of its failure the arms embargo was a contributing factor to what was then the poorly equipped Chinese Air Force (CAF) at the time of the Japanese invasion.

CHINESE MILITARY AVIATION EXPANSION DURING THE WAR

With the burden of the China Arms Embargo behind them, and more open foreign support, the Republic of China set out to establish an official Air Force. The Air Force was formed in April 1931 in conjunction with the foundation of the Chinese Aviation School in Chienchiu. This was around the same time that the Japanese moved into Manchuria while the Republic of China was facing serious problems, both internal and external. The early Sino-Japan air battles proved that the CAF was outmatched and outgunned. The Generalissimo, Chiang Kai-shek, knew that a solid air force was needed to unite the country under one government and to defend the country from foreign intrusion. President Chiang reasoned that the largest contributing factor to Chinese defeats in the early 1930's was Japan's air superiority.

After early failures the Chinese government sought much needed foreign aid in developing their air force. The Generalissimo recruited leaders who could train and direct the newly formed, struggling, Chinese Air Force. He hired a group of 17 American advisors led by retired Army Air Corps Major John H. Jouett.²¹ The job of these advisors was to help create an Air Force modeled after the United States Army Air Corps. The advisors had little to work with but went right to work in developing the Chinese Air Force. The Chinese ambition to build a strong air force also led them to hire a group of Italian advisors in 1933.²² The principle behind the hiring of the Italian advisors was well intended, allowing the Chinese to adapt the best practices from the two different air forces. However, in practice it created significant problems within the air force. Pilots were being trained using two different systems and then expected to work together. This training style resulted in significant impediments during the early stages of the war.²³

In addition to the American advisors, China continued to look to the United States for military aircraft. Fortunately for China, the US policy on selling military surplus to China had changed since the 1920's. The United States had two big problems on their hands, mostly economic in nature. The first issue stemmed from the US trying to balance war and peacetime military manufacturing. The US government wanted to continue to manufacture aircraft in preparation

²¹Hui, Samuel. "Fly Boys of the Generalissimo - 70th Anniversary of the Chinese Air Force Day." *War Bird Forum*: Chienchiu, 2001.

²²Ibid.

²³Ibid.

for potential wars. Issue 1 was compounded by issue 2; the end of the 1920's marked the beginning of the Great Depression in the United States and the nation could no longer justify the mass production of aircraft during peacetime. The solution to the two problems was to keep the aircraft manufacturing industry healthy by selling military aircraft to other countries, including China. Edward Howard, the aeronautics trade commissioner noted that the Chinese were looking for military aircraft and that American companies should move quickly in securing contracts from China.²⁴ The United States needed to sale planes and China needed to buy them. The American planes were the most difficult to obtain for the Chinese government. The bureaucratic system in the US often resulted in the government, in one form or another, delaying, reducing or cancelling Chinese orders. The Chinese often were frustrated and threatened not to do business with American aviation companies. As luck would have it for the Americans, the majority Chinese pilot's preferred American planes. Many pilots were afraid to fly the unreliable German made Junker planes and other pilots complained about the poor quality of the British made aircraft.²⁵

Another big milestone in the development of the CAF came in 1936. Up until this point the air force consisted only of loyalists to the republics cause. In 1936 pilots from Guangxi and Canton defected and joined the republics military. This allowed the Chinese to establish the Central Aviation Committee, given the responsibility of commanding all CAF units. Chiang Kai-shek, believing air power too crucial, kept it directly under his control by appointing Madame Chiang Kai-shek as the secretary of the Aviation Committee. Over the next year the CAF continued to train and develop their pilots in preparation for the inevitable full scale war with Japan. The CAF had come a long way, but still had much room for improvement. Commenting on the state of the CAF in the late 1930's one US Army Air Corps officer said:

The Air Force of the Chinese is small. The equipment is not uniform and the aircraft are old types with the exception of a few recently acquired. The military efficiency is poor. These forces could be quickly destroyed by one pursuit squadron.²⁶

Unfortunately for the CAF their opponent had a lot more to bring to the table than just one single pursuit squadron.

Just a year after the formation of the Central Aviation Committee the CAF was faced with its first chance to show that it had come of age. Estimates show that at the beginning of the air war that China boosted approximately 230 combat ready aircraft. The CAF at the time was mostly comprised of the US made Curtiss Hawk II and III as well

²⁴Xu.

²⁵Xu.

²⁶Ibid.

as the Boeing P-26C. The battle over Shanghai in 1937 was the world's first real look at the new CAF. A combination of a bad weather, inexperienced pilots, outdated aircraft, a formidable opponent, and lack of communication was just too much for the Chinese to overcome. The air force was not entirely ineffective but they lost more than they gained, or could afford for that matter. The bad weather combined with inexperience resulted in Chinese pilots missing their targets and hitting friendly targets, including Chinese citizens and a few near misses with British and US navy ships. Even without the bad weather and inexperience the Japanese military aviators were a tough match. Their planes were faster and their pilots were sharper. The Japanese were able to overcome the bad weather and pick off Chinese aircraft while continuing to bomb Shanghai. The Chinese ground forces had close air support for the time, but it proved relatively ineffective. Both the soldiers and airman were too inexperienced and the lack of proper communication rendered any benefit of close air support utterly useless.

Over the next few years of the Sino-Japan war, the fate of the CAF could be defined in one word, attrition. The Chinese did shoot down Japanese aircraft and win some battles, but by the end of the 1930's China was losing aircraft and experienced pilots with little or no hope for immediate replacement. Estimates show that by 1938 the Japanese had killed over two million Chinese while destroying over 1,500 Chinese aircraft and all but annihilating the Chinese Navy.²⁷ The Chinese military resistance was failing to fight off the Japanese. The Japanese were continuing to take control of Chinese city after another leaving the Republic cornered in southwest China. By 1938 the Japanese had blocked supply routes from the east and the south including Hong Kong and Macau. Eventually the Japanese movement west blocked supply lines from Vietnam.²⁸ This left the Chinese desperate for supplies with only one treacherous supply line through the mountains to Burma open. Adding to the China's woes, American support was dwindling as the US government diplomatically had its hands tied in an attempt to avoid war with the Japanese. The Chinese were desperate to keep their country alive and in dire need of outside help. The Republic of China needed a miracle.

US AIR AID TO CHINA: CLAIRE CHENNAULT

The beginning of the miracle needed by China had already arrived. Claire Chennault, a former US Army Air Corps pilot, was one of the aviation advisors to Chiang Kai-shek during the early stages of the war and acted as his chief of staff for air. Chennault was a brilliant air strat-

²⁷Slaughter, Scott. *Wings Over China The Flying Tigers Story*. Grand Rapids, Michigan: Abacus, 2011.

²⁸Ibid.

egist who was not afraid to differ from the commonly accepted strategies of the day. Although the highest rank he ever served in the US Army Air Corps was Major, he gave himself the title of Colonel during his time in China. Colonel Chennault was a coarse man, affectionately known as “Old Leather Face” by those who knew him.²⁹ He joined the military in 1917 but did not earn his wings until 1919. After earning his wings, he had a very slow start to his flying career. After only a handful of hours flying along the Mexican border and series of non-flying assignments he joined the 1st Pursuit Group at Ellington Field, Texas.³⁰ By this time, he had only logged 63 hours in the air over a 3 year period. By today’s standards, many pilots reach 60 hours of flying within a few months.

After a slow start Chennault had an impressive career with the US military. In 1929 Chennault was promoted to Captain and sent to Air Corps Tactical School, where he eventually stayed on as faculty. The Air Corps Tactical School was not just an ordinary training academy; it was known as the training ground for generals. The school acted as the think tank for US air war doctrine.³¹ Chennault made a name for himself, probably not in the best way, for being outspoken against the commonly accepted air doctrine of daylight precision bombing, preached by Italian Air Marshall Giulio Douhet.³² This doctrine is based on the principle that bombers were the future of air power and the pursuit planes, or as they are known today fighter planes, could not stop the lethal penetration of a bomber squadron. Chennault believed that pursuit planes could stop a bomber squadron through “teamwork, esprit, concentration of firepower, and the speed built up in a dive.”³³ Chennault spent a lot of time theorizing, developing and implementing strategy.

In addition to his expertise as an air war strategist Chennault was a tremendous aviator. While serving at the Air Corps Tactical School, Chennault was assigned by his commander to put together an Army Air Corps aerial demonstration team.³⁴ He handpicked his wingmen and the three men became famous as the Men on a Flying Trapeze. Their stunts were revolutionary and as an Army Air Corps News Let-

²⁹Ford, Daniel. “China Tiger: Claire Lee Chennault, 1893-1958.” last updated May 2015. <http://www.warbirdforum.com/clc.htm>.

³⁰Ibid.

³¹Ford, Daniel. *Flying Tigers: Claire Chennault and His American Volunteers, 1941-1942*. Updated and Revised Edition. Harper Collins e-books.

³²Ibid.

³³Chennault, Claire L. “The Flying Tigers - American Volunteer Group-Chinese Air Force.” History: American Volunteer Group. <http://www.flyingtiger-savg.com/tiger1.htm>.

³⁴Ibid.

ter reporter wrote: "Chennault's 'Men on a Flying Trapeze' performed feats heretofore considered impossible...[maneuvers] were executed with such precision and perfection that it seemed as if the three planes were activated by a single mind."³⁵ The Three Men on a Flying Trapeze had their last performance in December of 1935 which turned out to be important for the future of Clair Chennault, and more importantly the future of China. In attendance that day was Mao Pang-chu of the Chinese Air Force. After the show Colonel Mao made the three men an offer to come to China and be flight instructors for the CAF. Chennault's two wingmen immediately bought up the remainder of their enlistment and headed to China, Chennault was intrigued but did not take the offer at the time.³⁶ Over the next few years Chennault continued to negotiate with the Chinese government while his US military career wound down. A combination of hearing loss from open cockpit flying and bronchitis from an addiction to cigarettes resulted in Chennault being medically grounded from flying. His health problems and his outspoken nature against his superiors lead to the Army suggesting that he retire as a Captain.³⁷

After a few years of negotiations Claire Chennault began to realize that he had no current future in the US Army Air Corps and China might be his best chance at continuing to do what he loved and what he was good at. Later that same year he accepted an offer directly from Madame Chiang Kai-shek herself to come to China and join in the CAF in fighting off the Japanese.³⁸ A diary entry from his journal dated May 31, 1937 gives insight into his purpose for coming to China, the entry reads: "At last I am in China where I hope to be of some service to a people who are struggling to attain national unity and new life."³⁹ After arriving in China he took a three month assignment to survey the CAF, making \$1,000 a month, a salary significantly higher than what he was making as a US military officer.⁴⁰ Chennault's original 3 month assignment would be lengthened several times over.

THE 14TH VBS (INTERNATIONAL AIR SQUADRON)

One of Colonel Chennault's, as he was now known, first assignments was the organization of the 14th VBS or otherwise known as the International Air Squadron in late autumn of 1937.⁴¹ This was the first

³⁵Ibid.

³⁶Ibid.

³⁷Slaughter.

³⁸ Patten, Robert E. "Before the Flying Tigers." *Air Force Magazine*, 1999; 72-77.

³⁹Chennault.

⁴⁰Ford. *Flying Tigers*.

⁴¹Patten.

predominately American fighting force within the Chinese military, and laid the foundation for the American Volunteer Group that would follow. Chennault handpicked many of the pilots of the 14th VBS. The short roster of pilots included some very famous American aviators including James W.M. Allison, Billy MacDonald and Luke William-son.⁴² The 14th VBS was stationed at Hankow Airbase along with their Soviet counterparts. While the 14th was a small group and their existence lasted only a few months the impact of this squadron cannot be overlooked. They flew almost non-stop missions mostly over Northern China during its existence. The sacrifice of these early volunteers allowed the Chinese to survive to the end of the 1930's until the United States could become more openly involved in the fight for China. In the late 1930's Chennault observed that, "if the Chinese only had 100 good pursuit planes and 100 fair pilots, they'd exterminate the Jap air force!"⁴³ Chennault was convinced by the idea and he also convinced the Chinese that the only way to survive the Japanese invasion was for more American pilots and aircraft to enter the war. The next obstacle was to convince the United States of the same.

At the turn of the decade multiple events worked against the progress of the Chinese Air Force, and obtaining US support. First the Japanese had started to complain about the presence of foreign pilots in the CAF, specifically the Russians and the Americans. The Russians were not daunted by Japan's barking but the State Department of the United States paid closer attention. The United States was trying desperately to stay out of the World War developing both in Asia and Europe. Fearing Japanese retaliation and full scale war the Consular offices began to bar US pilots from entering China, and requested pilots already in China to immediately return home.⁴⁴

The result of less US pilots fighting for the Chinese concerned both Chiang Kai-shek and Colonel Chennault. Meanwhile, on the other side of the world another world event would result in a setback for the Chinese Air Force. June 25, 1940 the German aggressors defeated France and reached the English Channel.⁴⁵ France and England were forced to focus on their homeland and left a power vacuum that was immediately filled by the Japanese.⁴⁶ Most significantly this included the Japanese establishing an air base in Southern Indochina. This new base gave the Japanese Air Force more reach to bomb cities in south-west China. The war in Europe also resulted in Russia having to fight on their Western front. This finally slowed the final of Russian pilots to

⁴²Patten & Slaughter. & Ford. *Flying Tigers*. & Xu.

⁴³Slaughter.

⁴⁴Ford. *Flying Tigers*.

⁴⁵Xu.

⁴⁶Ibid.

aid China and ended Chiang Kai-Shek's quest for more modern Russian aircraft to be used by the CAF. Lastly, the raging war on the European continent had put a strain on US aircraft manufacturing. The US was preparing for war, and helping allied countries as much as possible with manufacturing of modern aircraft. When sent to the United States to secure aircraft for the CAF, Colonel Chennault expressed his own doubt in successful acquisition of modern US pursuit planes.⁴⁷ The two things that China needed most, good pilots and good planes were starting to seem more and more out of reach.

Lots of credit must be given to Chiang Kai-shek and other Chinese leaders like his wife, and his brother-in-law T.V. Song for their persistence with the US government in securing the help the Chinese so sorely needed. Chiang Kai-shek would not take no for an answer and pleaded with Washington and Ambassador Johnson, US ambassador to China, for aircraft and men to help the Chinese fight off the Japanese.⁴⁸ He also played with scare tactics by warning the United States what the possible result could be without US intervention. This included the Japanese being able to move freely across the Indian continent and joining hands with the Axis in Europe in world domination. The Generalissimo's made the Sino-Japanese war more relevant and important to the US, and not just a distant war with "yellow man killing yellow man" as reported by *Time Magazine*.⁴⁹

Madame Chiang Kai-shek was very influential and well liked by the Americans. She can be credited with securing the full allegiance and help of Colonel Chennault to the Chinese Air Force. Her brother T.V. Song was sent to Washington to help get what China needed. He was extremely sharp and well versed in the English language.⁵⁰ He was very influential and played a crucial role in convincing several of the Washington elite to supply China with both aircraft and pilots. After a lengthy negotiation process and with the help of influential people both in the United States and China the idea of the American Volunteer Group finally began to take off.

The idea of having American pilots flying for the CAF started to come back to life. The Chinese and Chennault originally requested an order of 500 modern US aircraft. Chennault pointed out that a fleet of 500 US aircraft would be: "sufficient to (a) protect strategic points, (b) permit local army offensive action, (c) permit the bombing of Japanese air bases and supply dumps..."⁵¹ In other words, the requested fleet would give China a fighting chance against Japan. However T.V. Song

⁴⁷Ibid.

⁴⁸Ibid.

⁴⁹Ford. *Flying Tigers*.

⁵⁰Ibid.

⁵¹Ibid.

was told by the Americans that asking for 500 airplanes was like asking for 500 stars at that point in time.⁵²

The Chinese did not initially receive the 500 planes that they were hoping for, but did secure a \$100 million loan from the United States. The next step was finding the aircraft to spend the money on.⁵³ Just a week after securing the loan the solution was discovered. The Curtis Wright Company in Buffalo, New York was busy mass producing the liquid cooled Tomahawk Fighter, designated as the P-40 by the US Army Air Force, for the Royal Air Force in England. To help keep the plant at capacity and help China, a country that the Curtis Wright Company had already developed a good relationship with, the factory would extend the production run by 100 aircraft.⁵⁴ The P-40 was bound for China. Colonel Chennault visited the plant as part of negotiations. He was familiar with both the company and the aircraft. He had served with the president of the company in the Army Air Corps, and knew him well. The P-40 was simply an upgraded version of the H-75 or P-36; an aircraft Chennault knew as well as he knew himself. Curtis Wright took the P-36 and enhanced it with a liquid cooled engine and heavier guns and armament. While Chennault was extremely familiar and trusting of the performance of the P-36 he did not particularly like the P-40. The liquid cooled engines were less than appealing to Chennault. The fact that one bullet through the cooling system could result in engine failure ultimately forcing the aircraft to the ground made him feel uneasy.⁵⁵ However, the P-40 was well built and when it came down to it, it was a lot better than what the Chinese had left. With that, the planes were crated and sent around the world to Rangoon, Burma for use in China.

The Chinese were starting to get what they needed, it was not exactly what they were hoping for, but it was good start. The Chinese still needed experienced aviators to fly the planes that were coming across the ocean. Ambassador Johnson's comments to Chiang Kai-shek regarding American Pilots in China did not appear promising; he said, "the US government [is] unable to send American aviators to Great Britain, not to mention China."⁵⁶ Yet again the Chinese coalition, including Chennault was undaunted and determined, even desperate, to get what was required. At the time there were a number of pilots in the United States eager to get involved in the action, but the US would not grant passports to individuals with the intentions of enlisting in a foreign military. Chennault informed the US government that helping

⁵²Ibid.

⁵³Chennault.

⁵⁴Xu.

⁵⁵Ford. *Flying Tigers*.

⁵⁶Xu.

China would not only be in the interest of the United States but that “the opportunity for our men to acquire actual combat experience appears to be a factor that should be given some weight.”⁵⁷ This appeal, along with several others reached the Oval Office and won the favor of President Roosevelt. President Roosevelt then issued a directive for the organization of the American Volunteer Group to serve in the CAF under the leadership of Colonel Chennault.⁵⁸

To help maintain US neutrality the volunteers would have to travel to China following specific conditions. Volunteers would first have to resign their commissions in the US military; they would then enlist in the CAF but take no oath of allegiance. After their service in China was done the volunteers could return to the US military at the rank at which they resigned. The volunteers would have to travel abroad as civilians. Their passports listed occupations such as businessmen, students, and performers. The conditions were set, the airplanes were on the boat, and all that remained was filling the roster of the 1st American Volunteer Group.

Chennault put an experienced recruiting team together with Rutledge Irving, a retired Navy Commander, Skip Adair, a flight instructor living Yunnan-Yi, and Richard Aldworth, who was wrongly believed to have volunteered to fly in France during WWI.⁵⁹ Chennault was strict in the recruiting of pilots for the newly formed AVG. Originally recruiters were selling the mission as chance to see the world and make a lot of money shooting down unescorted and defenseless Japanese bombers. Chennault was furious with this form of deceitful recruiting and made his recruiting policy clear by saying:

In telling the AVG story to pilots...nothing should be omitted. Far from merely defending the Burma Road against unaccompanied Japanese bombers, the AVG will be called upon to combat Japanese pursuits, to fly at night; and to undertake offensive missions...These points should be clearly explained... [pilots should not be hired on a principle of] come one come all.⁶⁰

The job was dangerous and required the best pilots, pilots who were willing to take risks. Chennault believed the AVG could be the difference in the war, but he needed the right pilots. The recruiters were successful in finding pilots to fill the rosters. The pilots were attracted to several different aspects of the job. Many were pilots who simply loved to fly and were lured by the opportunity to get combat flying experience. Others jumped at the adventure of the Far East. Most if not all were influenced by the lucrative pay offered. The pay for volunteer

⁵⁷Ford. *Flying Tigers*.

⁵⁸Xu.

⁵⁹Ford. *Flying Tigers*.

⁶⁰Ford. *Flying Tigers*.

pilots was \$600 a month with an additional promised bounty of \$500 for each confirmed Japanese aircraft shot down.⁶¹ In today's dollar that equals over \$10,000 a month. This was an attractive perspective for most of the recruits. A combination of all these attractive prospects helped fill the roster of pilots for the AVG. In addition to pilots the AVG also recruited necessary ground crew to support air operations.

During the summer and fall of 1941, US volunteers boarded ships heading for Burma, the first home of the AVG. The last ship with the members of the first volunteer group arrived in November 1941. The AVG began their training phase at the RAF base in Rangoon, while the P-40's were being assembled nearby.⁶² Training turned out to be more necessary than Colonel Chennault had originally planned. Several of the pilot volunteers, eager not to miss out on this opportunity, had lied about their flying experience. Chennault had requested pilots with significant pursuit flying experience.⁶³ Some pilots had never flown pursuit or had limited experience. This is not to say that they were not experienced pilots, they just were not experienced flying the right type of aircraft. Colonel Chennault took advantage of this opportunity to teach his own fighter doctrine that would prove significant advantage in the ensuing air battles.

Colonel Chennault's fighter doctrine was different than what was the general consensus at that time. He had developed this doctrine through his own experiences and education, including his time as a student then instructor at the Air Corps Tactical School, flying as part of the Flying Trapeze and his years of studying the Japanese Army Air Force and Navy. Chennault knew the air tactics and capabilities of the Japanese better than any other American at that time.⁶⁴ Chennault knew that the P-40 could not match the Japanese Zeros using traditional aerial combat. The Zeros were lighter weight and more maneuverable than the P-40's.⁶⁵ In addition, the Japanese almost always outnumbered the American volunteers; at times the Japanese would outnumber the AVG 8 to 1.⁶⁶ Chennault's men were taught to never enter a traditional dog fight with Japanese aircraft; if they did they would most likely not come out alive. Chennault was in no way going to underestimate the Japanese aircraft or aviators.

The Flying Tigers were taught to use the weight of their aircraft as an advantage. Because of the weight, the dive speed of the P-40 could not be matched by the Japanese fighters. The Flying Tigers would work in

⁶¹Slaughter.

⁶²Ford. *Flying Tigers*.

⁶³Slaughter.

⁶⁴Chennault.

⁶⁵Ford. *Flying Tigers*.

⁶⁶Slaughter.

pairs, with a wingman, and would climb to high altitudes. They would then attack their opponents from above and continue the dive to outrun the Japanese. Once they were clear of their opponents they would regain altitude and then again attack from above. The P-40's heavy guns were more than enough to tear through the weak armor of the Japanese aircraft. Employing this revolutionary strategy, the outdated P-40's stood a good chance against the powerful Japanese. In addition to the dive-n-zoom technique, Chennault introduced another revolutionary idea known as defense pursuit strategy.⁶⁷ This meant that the Flying Tigers would intercept enemy bombers before the bombers reached their targets. While this strategy may be simple, and seem like common sense, it truly was revolutionary idea. The common air doctrine at that time was that pursuit planes could not stop bombers from completing their missions. Chennault's theory, put into practice by the Flying Tigers, would prove the contrary to be true. In addition to Chennault's revolutionary tactics he also utilized the people of China in developing and implanting an early warning system. It was known as the best air raid warning system in the world at that time. In his own words Chennault described the network by saying:

The Chinese air-raid warning system was a vast spiderweb of people radios, telephones, and telegraph lines that covered all of Free China accessible to enemy aircraft. In addition to continuous intelligence of enemy attacks, the net served to locate and guide lost friendly planes, direct aid to friendly pilots who had crashed or bailed out, and helped guide our technical intelligence experts to wrecks of crashed enemy aircraft.⁶⁸

This system proved effective and saved countless lives by giving an early warning of approaching Japanese bombers. This early warning allowed Chinese citizens to flee to safety while the AVG was able to use its defense pursuit strategy to intercept the incoming bombers.

While in Rangoon the Flying Tigers were split into three squadrons, each with an assigned squadron leader making a salary of \$750 a month. The 1st Pursuit Squadron became known as Adam and Eve.⁶⁹ Robert (Sandy) Sandell, a former flight instructor at Maxwell Field was to be squadron leader for Adam and Eve. The 2nd squadron took on a more local name and was known as the Panda Bears.⁷⁰ Jack Newkirk, a naval aviator who spent a considerable amount of time flying from the Yorktown, was assigned to lead the Panda Bears. The 3rd squadron was led by a man with lots of P-40 experience, Arvid Olson. The 3rd

⁶⁷Ibid.

⁶⁸Chennault.

⁶⁹Slaughter.

⁷⁰Ibid.

pursuit squadron was known as Hell's Angels.⁷¹ After the squadron leaders were picked it was then time to fill the rosters. Just like school boys at recess the squadron leaders took turns picking their pilots. Not surprisingly, the Panda Bears ended up being comprised mostly of naval aviators while the Hell's Angels roster was full of Army Air Force flyers, many of whom had served at Mitchell Field with Olson. The squadrons were set and the Flying Tigers went to work preparing for their first encounter with the Japanese.

The 1st and 2nd squadron moved to Kunming in China while the 3rd squadron was lent to the RAF in Rangoon. 20 December 1941, over the open skies of Yunnan the AVG saw its first action. The 1st and 2nd squadron intercepted 10 incoming Japanese bombers. The AVG took down 9 out of the 10 bombers. This day also marked the first loss of an AVG aircraft in battle. This just marked the beginning of the AVG's success in China.⁷² Just three days later, the 3rd squadron saw action while protecting Rangoon flying alongside the RAF. The Japanese sent three bombing squadrons, known to the Japanese as sentais, to bomb Rangoon. The AVG and RAF were able to down 6 bombers and 4 fighters while losing four AVG planes and one pilot. After this bombing of Rangoon the Japanese made a public warning to the Americans. It called out the American outlaws and stated that the Japanese would be delivering presents to the Americans on Christmas. This set the stage for one of the greatest air victories in US history. True to their word the Japanese came with presents on Christmas day, 63 bombers escorted by 25 fighters. The Hell's Angels were ready and Chennault reported that the AVG downed 23 enemy aircraft.⁷³ For the first time since the Japanese invasion of Manchuria the Imperial Japanese Army Air Force was tasting defeat.

The next few months the Flying Tigers continued to defend Chinese cities against aerial bombings and also make bombing runs against Japanese air bases in Thailand. One of the recurring missions of the AVG was the protecting of the precious Burma Road. This was the road that the Chinese people had carved out in order to keep necessary supplies coming into China. This precious route fell under the protective wings of the AVG.

The AVG faced great obstacles while serving in Southeast Asia. In addition to a well trained and equipped opponent the AVG had very difficult living conditions. Many men became sick due the unfamiliar of unsanitary living conditions. Tools and parts were sometimes seemingly impossible to find and the mechanics of the AVG often cannibalized other aircraft among other creative solutions to keep the

⁷¹Ibid.

⁷²Chennault.

⁷³Ibid.

AVG pilots in the air. The Flying Tigers continued to operate as the AVG under the CAF until July when they became the 14th Air Force with the newly promoted General Chennault at the command. The 14th Air Force continued to serve in protection of China until United States defeated the Empire of Japan. Over their period as the AVG, 22 airmen gave their lives either in combat or accidents. For their sacrifice the Flying Tigers claimed 296 Japanese aircraft totaling over a 1,000 Japanese airman killed. It is important to note that the Japanese records indicate that only 115 planes downed with 300 airmen lost.⁷⁴ It can be assumed the true number lies somewhere in between. Regardless of the exact number the contribution of the Flying Tigers to both the Chinese and Americans was extremely significant.

The reception given to the Flying Tigers by the Chinese people is best summed up by Madame Chiang Kai-shek who referred to the AVG as her "Flying Tiger Angels."⁷⁵ The people of China were extremely demoralized and the valiant sacrifice of these young Americans changed the way that the Chinese viewed the west. The Chinese, especially the ethnic minorities in the Yunnan province were very helpful to the missions of the AVG and on several occasions saved the lives of US airmen.⁷⁶ All the members of the AVG wore what was known as a blood chit on the back of their flight jackets. This blood chit was written in Chinese and said, "This foreign person has come to China to help in the war effort. Soldiers and civilians, one and all, should rescue and protect him."⁷⁷

Local villagers would seek out and give aid to downed US pilots before the Japanese could find them. In southern China people still tell stories to their grandchildren and great grandchildren about searching and caring for their American protectors. In the minds of the Chinese people it was the least that they could do. After all was said and done the AVG had cost the Chinese government significantly more than expected. Chennault wrote a letter apologizing to T.V. Song for the cost. Dr. Song's reply sums up the value of the Flying Tigers to the Chinese people when he replied, "The A.V.G. was the soundest investment China ever made. I am ashamed that you should even consider the cost."⁷⁸ The Flying Tigers had proved to be priceless to China and its people.

The Flying Tigers had great effect on the American people. Just weeks after the Japanese bombing of Pearl Harbor the Flying Tigers were shooting down Japanese aircraft at a kill ratio of 15:1 according

⁷⁴Slaughter.

⁷⁵Ford. *Flying Tigers*.

⁷⁶Wang, Zhongguo. "The Flying Tigers Hold High Honor in China." China Internet Information Center. <http://www.china.org.cn/english/NM-e/142991.htm>.

⁷⁷Slaughter.

⁷⁸Chennault.

to some sources. The stories and triumphs of the Flying Tigers were broadcast to the American people, lifting spirits and instilling patriotism. The spirit and success of the AVG brought hope to an American people who were desperate for good news in what was a very dark and unsettling time in American History. It helped the Americans believe that they could defeat the Japanese and avenge December 7, 1941. General Hap Arnold while addressing one of the members of the AVG expressed their positive effect by saying:

You guys were pretty good but I don't know if you realize it or not but the number of planes you shot down was not your main contribution to your country. [Your area of operation] was the only place in the world where good news was coming from. Your main contribution was the moral boost you gave the people of the United States.⁷⁹

Part of the moral boost came because of the battles won against the Japanese, the other part came simply because, the unit, in and of itself, represented what was great about America during the World War era. It represented a strong Army Air Force that boasted the best pilots in the world. But it wasn't just that either, the unit was the embodiment of young men who would volunteer their skills, and risk their own lives to defend the freedom of a people in a faraway land, people whom the vast majority of the volunteers had no personal connection what so ever. Some referred to the Flying Tigers as simple mercenaries, but most know them as US Airman, guardians of freedom and justice, the nation's sword and shield.

For some years the story of the Flying Tigers was not well known in China or the United States. The Chinese story was partly lost due to the fact that the Republic of China was defeated by the communist party and replaced by the People's Republic of China in 1949. It was not the policy of the PRC to make the ROC look good, therefore the stories of the Republic's resistance against the Japanese invasion was not well publicized until recent years. The United States on the other hand was reluctant to disclose that the AVG was approved by the White House when the US was supposedly neutral. In 1991 the US government finally recognized its creation and support of the AVG. Seventeen AVG pilots received the Bronze Star and the Distinguished Flying Cross in 1996.⁸⁰

Today, the Flying Tigers are starting to get the attention and credit that they deserve both in the United States and China. The Chinese government has worked alongside historical groups both in China and the US to preserve the legacy of the Flying Tigers by establishing monuments, memorials, and museums. There is still much work to be done to preserve the amazing story of American assistance to China

⁷⁹Slaughter.

⁸⁰Ibid.

during World War II.

It is an amazing thing to see the popularity of the Flying Tigers in China today, especially in the Yunnan province. Walk down the street in Yunnan and ask someone, in Chinese preferably, if they have heard of the Flying Tigers. Almost without fail that person will say of course and tell you that they were the Americans that beat the Japanese. If you happen to ask someone who was alive during World War II the response may be emotional and accompanied by a thumbs up.⁸¹ The Flying Tigers remain near and dear to the hearts of the Chinese people. They are a people eternally grateful for the sacrifice of those young Americans so long ago.

The future relationship between China and the United States seems uncertain at times. However, the story of the Flying Tigers and American air aid to China gives hope for future generations. The current Vice-President of China, Xi Jinping, recently stated that, “people-to-people exchanges are the foundation of China-US ties, and the undying force behind growth in China-US ties.”⁸² Over 70 years ago the American Volunteer Group laid a foundation in China that is still alive today. This gives hope that that foundation can continue to be built upon. The Defense Minister of China, Liang Guanglie, recently visited the United States. Among his stops in the United States was a meeting with surviving members of the AVG and their descendants. Minister Liang emphasized that China will never forget the sacrifice of the Flying Tigers, and that it remains a household name among the Chinese. In addition he met with US Secretary of Defense, Leon Panetta, stating that they hope the Flying Tigers can serve as a foundation to cooperative partnership based on mutual respect and benefit while pushing forward towards healthy and strong military ties.⁸³ In the coming decades the United States and China will represent the largest economies and militaries in the world. It would be in the best interests if both countries could develop a strong relationship based on mutual respect and understanding. While China and the United States are very different countries, perhaps the legacy of the Flying Tigers can serve as the foundation for a strong future.

The time period between the First World War and the end of the Second World War did much to shape the world as we know it today, especially the world of aviation. The Japanese invasion of China was a tragedy in China but it set the stage for the development of Chinese military aviation. The United States air aid to China during the 1930's and 1940's not only helped to define Chinese aviation but was the defi-

⁸¹Pellman, Tom. “The Famed Flying Tigers.” China Expat. <http://www.china-expat.com/2007/09/30/the-famed-flying-tigers-2.html/>.

⁸²Xu.

⁸³Xinhua. “Chinese Defense Minister Meets “Flying Tigers” in US.” Capital FM News, May 8, 2012.

inition of the spirit of United States military aviation. It was an inspiring example of real American heroes, who as underdogs, came to aid of a people who so desperately needed it. It is the story of victory, both strategically and morally. Finally, it is a story of the undying brotherhood and bonds that come from desperate situations and sacrifice. The young men of the AVG brought hope 70 years ago, and continue to do so to this day.

SECTION IV

HIGH SCHOOL ESSAY CONTEST WINNERS: 2015

1st Place Winner **THE WOMEN OF THE NUBA MOUNTAINS**

By: Chayston Wood

Chayston Wood is a student at Copper Hills High School, located in West Jordan, Utah. He is always seeking to learn through researching diverse topics, and also looks for challenges in school by keeping his schedule full of AP and honors courses. He is involved in many extracurricular activities, such as ice hockey, pole vault, instrumental music (with the trumpet and piano), and motorcycle riding. He loves attending a seminary class offered through the Church of Jesus Christ of Latter-day Saints (LDS), and is the LDS seminary council president at his high school. Currently, he lives with his parents and four younger brothers in West Jordan, Utah.

So often in the world's history, women have been oppressed in some way or another. From civil rights to their treatment at home, women struggle to gain the equality they deserve. In society and households all over the world, men believe they are superior to women only because of their gender. Among the most maltreated women are those living in the mountainous regions of the world. Anna Ganguly conveys in her article "South Asian Women and Sustainable Development," that the people living in the world's mountains are among the poorest and most disadvantaged.¹ However, these amazing women have and will continue to overcome obstacles to play an important role in the sustainable development of their mountain homes. Women must overcome oppression if they want to participate in their essential role of development, such as holding government positions and utilizing their knowledge of resources.

Mountains are vast and dangerous places to live. In an article produced by the Food and Agriculture Organization of the United Nations, Claudia Veith states that mountains "cover approximately one-quarter of the world's surface" and contain "[12] percent" of the total human population.² She continues to mention that mountains are "high-risk environments" with disasters such as "avalanches, landslides, volcanic eruptions, earthquakes and .

¹Ganguly, Anna Nath. "South Asian Women and Sustainable Development: Redefined Role and Practices." *World Focus*, 2013.

²Veith, Claudia, Why Invest in Sustainable Mountain Development? (Rome: Food and Agriculture Organization of the United Nations, 2011), 3.

.. floods.”³ Those living in mountainous regions have larger distances to travel to gather fuel, along with agriculture becoming increasingly difficult due to recent climate changes.⁴ Because of these problems, and the fact that people attempt to inhabit these regions, Rudaz and Debarbien agree in their article, “Mountain Women...” that mountain problems have become a global issue.⁵ Now it is necessary for the mountain regions of the world to become sustainably developed. Yet, the process of bringing sustainability to mountainous regions is a slow process. As shown above, there are many obstacles when a society attempts to tame the wild mountains. However, the advantages to sustainability makes the journey well worth it. Among other things, developing these regions would lower poverty and bring a brighter future for the next generation. Ganguly believes that women play a key role in bringing this generation into sustainability.⁶

This raises the question: how do women actually contribute to sustainable mountain development? First, one must understand what development requires. According to Rudaz and Debarbien, sustainable mountain development comes when ecosystems in the mountains are “managed” in ways that “allow them to provide goods and services” for both the mountain and “lowland” people.⁷ One step beyond that, as advocated by Veith, is the implementation of government policies that aid in the development of a stable mountain economy.⁸ Resource management and government involvement are necessary for development, and different groups of women from all around the world have contributed in multiple ways to bring about these two goals. With regard to agriculture (or “goods and services”), Ganguly references women in Nepal and India who participated in mountain ecosystem protection, and another group that has developed a new way of cultivation.⁹ Some Indian women even made a stand against green felling¹⁰ and they succeeded in getting this harmful practice banned for fifteen years by India’s prime minister. When women are involved in government, prog-

³Ibid.

⁴Ibid., 29.

⁵Rudaz, Gilles and Debarbien, Bernard, “Mountain Women: Silent Contributors to the Global Agenda for Sustainable Mountain Development.” *Taylor and Francis*, 2012.

⁶Ganguly.

⁷Rudaz, 41.

⁸Ibid.

⁹Ganguly.

¹⁰Green felling: is the beginning of the logging process.

ress happens. These examples show what is required and how women have contributed, especially to the quickly developing area of southern Asia, but what about even less developed areas?

If we look at Africa, there are countries from this impoverished continent we commonly think of when the term “third world country” is used. With tribal rivalries and the imperialist influences, among other issues, this area of the world has been extremely slow to develop. In the war-torn African country of Sudan, resides the Nuba Mountains. The women residing in these mountains have a seemingly endless list of disadvantages. As stated by Rudaz and Debarbien, mountain women share many of the same challenges as other women, but “their work is intensified by altitude, steep terrain and isolation.”¹¹ While that statement is true for all mountain women, it can strictly apply to the women of the Nuba Mountains. These women share the same challenges as other mountain women, but their work is intensified by severe oppression. Rahim states, in the article, “The Need to Improve the Living Conditions of Women in the Nuba Mountains,” that women are considered second to their husbands in this region.¹² He continues to explain the educational problems in the mountain schools where in some areas they only have four-years available, “despite the mandatory eight years” that are “required by the education system.”¹³ Women are at an even greater disadvantage than men because many women drop out of school to marry at a young age. Rahim provides the reason for this oppression is due to being “subject to religious beliefs, culture and traditions that restrict women’s rights.”¹⁴ If any women in the world have oppression they need to overcome, it is these women.

Education is greatly beneficial when it comes to development. Without proper education, women will continue to be oppressed, since men feel they can justify inequality among genders when women are not educated; even if this justification is flawed. Education, such as a knowledge of other areas of the world outside of their homeland, can provide women with more ideas on how to fix their societies. Women living in different environments have been able to overcome their mistreatments and repressed situations and emerge and help society to develop. Yet, it seems that there is no possible way for these women to over-

¹¹Rudaz.

¹²Rahim, Asha Abdel, “The Need to Improve the Living Conditions of Women in the Nuba Mountains, Southern Kordofan.” *Taylor and Francis*, 2010, 172.

¹³Ibid., 176.

¹⁴Ibid., 173.

come obstacle after obstacle, especially since there are so many offenses against women in this region.

As previously stated, the keys to sustainable development in these areas are the management of resources and the aid of the government to obtain a stable economy. In looking first at the management of resources, Rahim suggests that about 60 percent of homes in the villages of the Nuba Mountains are headed by women, that are not allowed to have property rights.¹⁵ This is a major holdup when it comes to agriculture. If women cannot own the land, they have no control over it. To some people, this may not seem like a major issue. There are many that believe that men will continue with agricultural developments without women. However, this is not an accurate vision. Veith claims that women in these mountains actually work much more than men.¹⁶ Women perform tasks of collecting water and fuel, making food, and caring for children. The Nuba women also perform 50 percent of the agricultural and livestock duties, which shows women have equal experience with men in this matter. With 60 percent of the homeowners in these mountains having no control over property resources, development seems to be a long way off.

The government also causes many obstacles for women in this region. Rahim notes that legally in Sudan, women are inferior to men.¹⁷ In fact, the government hinders both key features of sustainable development. According to McFarland's article, "The Victimization of the Nuba Women" the government appoints officials to flog women for selling food.¹⁸ This issue shows the lack of government support through discouraging women from participating in the gathering and selling of natural resources. As bleak as this may sound, there are some women still helping this area achieve mountainous sustainable development by overcoming countless obstacles.

Because of women helping with half of the agricultural work, at home, they know how to utilize the "value and diverse uses of plants.. [for use in] nutrition, food security, health and income."¹⁹ In fact, Ganguly announced that the Food and Agriculture Organization believes that women living in these mountains are "experts in the selection, cultivation, and processing" of plants.²⁰

¹⁵Ibid.

¹⁶Veith.

¹⁷Rahim, 172.

¹⁸McFarland, Sherri. "The Victimization of the Nuba Women of the Sudan." *Journal of Third World Studies* Fall 2008, 35.

¹⁹Ganguly.

²⁰Ibid.

Women are effectively using their knowledge of local plants to aid in the management of the area's resources.

In the government, McFarland said that 25 percent of the South Kordofan Parliament seats now have been reserved for women.²¹ The more that women become involved in the decision-making process, more issues regarding development will be resolved. These women bring new knowledge and insight into the government. They have a long history of oppression, and seek to be relieved from it. Among the offenses that the women of the Nuba Mountains seek to make right are issues that involve agriculture and government support. These facts are evidence that women are trying to overcome their trials. What once was a culture that suppressed women has now become a society rocketing towards modern views of equality. Of course, many people believe this area is far from being fully developed. It's a process, and recent moves by the government in finally giving women a voice is significant progress.

Women will always find a way to aid in the development of mountain regions. In fact, women help all societies in one way or another. In mountain regions, women aid with their knowledge of plant life and resource management, and their participation in government. Sure, there are countless obstacles blocking development, especially for women. But in areas like the Nuba Mountains of Sudan people are seeing the impact that women have in the sustainable development of these troubled mountainous regions.

²¹McFarland, 36.

2nd Place Winner
**WOMEN OF THE MOUNTAINS: SUSTAINABLE
 DEVELOPMENT**

By: Caroline Moss

Caroline Moss is a senior at Copper Hills High School in West Jordan, Utah. She recently participated in the UVU Women of the Mountains Essay Contest. Over the past few years she has taken several Advanced Placement courses and thrives on the rigor that they provide. She looks forward to her next school year when she will be serving as an editor on her school newspaper and as the president of her local National Honors Society chapter.

The United Nations Under-Secretary-General and Executive Director of UN Women gave a speech regarding the potential of women with regards to sustainable development. She remarks that, "Countries with higher levels of gender equality perform better in education, health, and economic growth."¹ Her statement demonstrates the idea that when given the opportunity, women have the power and influence to change the world for the better. They have the potential to impact efforts towards sustainable development throughout their societies. Women of the mountains in Afghanistan and throughout the world are fighting for the right to have their voices heard. Sustainable development has a great potential for success if all people, men and women, are given the opportunity to participate in achieving this goal. In order to do this, women need to be respected. They need to be provided with an adequate healthcare system, so that their physical needs can be met. They also need the opportunity to be educated. The women of Afghanistan need support in opposing the physical and sexual violence committed against them.

The healthcare system in Afghanistan is inadequate. In many instances, lives have been lost because of the deficiency of the healthcare system in that area of the world. From womb to tomb, women and the entirety of the Afghan people have suffered because, of their insufficient healthcare system. Sufficient healthcare is usually only available to those who are wealthy. Women

¹Mlambo-Ngcuka, Phumzile. "High-Level Forum on Investing in Adolescent Girls." Speech, United Nations Head Quarters, New York City, New York, March 11, 2014.

who have access to money use preventative and curative health-care services more frequently. This system leaves tremendous room for improvement. *The Pediatric and Perinatal Epidemiology Journal* reported that a fetus' chance of survival is heavily dependent upon the health of the mother. They explain the correlation between fetus fatalities and the conditions of the mothers. The results of the study illustrated in the journal, shows that pregnant women in Afghanistan need a better environment and more access to treatment.² The aforementioned factors in a woman's pregnancy increase the likelihood of survival for mother and child. Another instance of poor healthcare in Afghanistan is the case of Farah Ahmedi. In her memoir, *The Other Side of the Sky*, Farah describes her experience one morning living in Afghanistan as she was traveling to school.³ In an attempt to reach her school quickly, she diverged from her usual path. She cut across a field and unbeknownst to her the danger that awaited her there. In her rush, she stepped on a land-mine and didn't realize it until it was too late. Farah's leg had to be amputated. The doctors treating her knew, if she were to survive they would need to send her where there were medical experts who had the proper training and access to medicine. Farah was sent to Germany to receive the medical help she needed. She spent many months away from all of her family at a very young age. The healthcare system in her country was limited, and she survived because she was sent to a more developed country. Living in Germany unveiled a new world for Farah. She was able to see a new world that changed her viewpoints on what true living looked and felt like. Since Farah had this exposure to the outside world, she felt out of place once she returned to her restrictive home. She had experienced democracy and a world that had many technological advancements. Farah wanted a better lifestyle and desired more freedom and knowledge.⁴

Education brings knowledge; knowledge helps us to recognize and utilize our voice. Cultures that have limited foresight and knowledge are oppressive and reinforce a lack of education for women. The author and founder, Shannon Galpin of the non-profit organization Mountain2Mountain, witnessed a culture that shields women from men and the world. Her experience in the home of an Afghan family she describes as "women stayed in a separate part of the home. The young boys served

² *The Pediatric and Perinatal Epidemiology Journal*

³ Ahmedi, Farah. *The Other Side of the Sky: A Memoir*. New York City, New York: Simon and Schuster Inc., 2005.

⁴ Ibid.

dinner, so the women were still not seen.”⁵ The male guests of this family were literally not allowed to view the wives and older daughters of the Afghan men. Because Shannon was a woman, she was given the opportunity to meet and talk with the women of the family. She recognized that they were all individual people with their own individual ideals and beliefs. She saw they all had potential. Unfortunately, she also saw them being segregated from the outside world. Men within the Afghan culture have a strong desire to protect their women, but they do not realize how detrimental their actions are. The protection that they give, shields the women from a world of knowledge, justice, and equality. Some of these men are not opposed to allowing their daughters attend school, but the majority of them have not taken the necessary steps to ensure that both males and females have the right and opportunity to receive an education. Nor have they modified their cultural norms to incorporate the commonality of education for both boys and girls.

In the book *Half the Sky: Turning Oppression into Opportunity for Women Worldwide*, the author describes a girl from a very poor family and village. The girl has to stop going to school because her family didn't have the funds to send her. They didn't see the value of her continuing her education. A wealthy benefactor heard of her struggles and decides to not only fund her education but all the girls in the entire village. The town changes enormously because the girls who were educated applied their new skills and improved their way of life. The book claims that, “[u]ntil women are numerate and literate, it is difficult for them to start businesses and contribute to their national economy.”⁶ There is a strong correlation between education and the enhancement of societies. Nations that have a desire to improve should not oppress their people, or the women that have the potential to change their future. Education is a basic right that needs to be protected.

Another basic right is the ability to feel safe and protected. A necessity for empowerment and providing opportunities for women is having the right to stand up against the physical and sexual injustices that are done against them that cause them to feel unsafe. In her book, Shannon Galpin illuminated the physical and sexual injustices done to women in Afghanistan. Many

⁵Galpin, Shannon. *Mountain to Mountain: A Journey of Adventure and Activism for the Women of Afghanistan*. New York City, New York: Macmillan Publishing Group, 2014, 19.

⁶ Kristof, Nicholas and Sheryl WuDunn, *Half the Sky: Turning Oppression into Opportunity for Women Worldwide*. New York: Random House, Inc., 2009, 170.

women in the country have been sent to prison for “adultery” because they were raped.⁷ Within this patriarchal culture, there is little to no defense for the women accused of “adultery.” They would rather have their women sent to prison than acknowledge and take responsibility for the crimes committed against women. Galpin states that “[r]ecent studies estimate that nearly 80 percent of the female prison population in Afghanistan has been convicted on morality crimes.”⁸ The majority of these women were imprisoned for acts done to them, not by them. In a system where the perpetrator of the crime is confused with the victim, leads you to wonder if any progress can be made towards enhancing the aforementioned system. The women throughout this system have virtually no support in negating any unfair accusations that come their way. How can any woman flourish in this type of environment? As demonstrated by Abraham Maslow and his Hierarchy of Needs, it is extremely difficult for a person to focus on a higher level of functioning when their basic needs of food, safety, and health are not being met.⁹ Women cannot be expected to make sufficient progress in aiding sustainable development if they do not feel that they are safe. They need to be given respect and assistance in gaining their basic needs.

In conclusion, women in the mountains of Afghanistan possess the potential to be a leading force for their country’s sustainable development. They first need suitable conditions to accomplish their potential. Next, they require healthcare that is beneficial to them, and not detrimental. Women need to be given the right to gain an education and the right to use their voice. Through having a voice they can resist physical abuse and societal injustice that’s impressed upon them. Afghan women have the potential, as do their counterparts throughout the world, to instigate tremendous progress in their society. If they were only given the chance.

⁷Often times women were raped by a close family member or family friend.

⁸Galpin,146.

⁹Maslow, Abraham. “A Theory of Human Motivation” *Psychological Review*, 1943.

3rd Place Winner WOMEN INVOLVED IN DEVELOPING MOUNTAINOUS REGIONS

By: Melissa Hansen

Melissa Hansen is a sophomore at Copper Hills High School, located in West Jordan, Utah. She has resided in Utah her entire life, and enjoys playing the piano and participating in sports such as basketball and running cross country. In 2015, she was the 3rd place winner in the Youth of the Mountains Essay Contest for High Schools.

For thousands of years, humans have lived in mountainous regions all over the world. Mountains offer a wide range of resources and have even been considered holy by several groups of people. However, the inhabitants of some alpine areas suffer from problems such as a harsh climate, isolation, and poverty. According to R.K. Maikhuri et al, in the article “Managing Natural Resources Through Simple and Appropriate Technological Interventions for Sustainable Mountain Development,” they suggest that people in mountainous regions tend to be poor because of inaccessibility, substandard infrastructure, and few opportunities for economic gain.¹ Within most alpine communities technology and male authority are very similar, and they can be demonstrated with specific examples. Third world mountain societies need to improve gender relations along with technological developments to achieve equality and have a happier life. Women and men in the mountains, as well as developers must work together to create a better society both in and around the mountains.

One of the most important changes that needs to occur in mountain societies globally is gender equality. This does not mean that men and women will have exactly the same roles, but rather each individual will have equivalent opportunities and a voice in authority. In the past, males living in the Himalayas and other mountainous regions have had a greater influence in political gatherings. In the article “Mountain Women, Dams, and

¹ Maikhuri, R. K., L.S. Rawat, Vikram S. Negi, V.K. Purohit, K.S. Rao, and K.G. Saxena. “Managing Natural Resources Through Simple and Appropriate Technological Interventions for Sustainable Mountain Development.” *Current Science* 100 no. 7 (2011) 993.

the Gendered Dimensions of Environmental Protest in the Garhwal Himalaya,” the author, Georgina Drew depicts a meeting in which, there were two times as many women in attendance than men, but the men still led the discussion. The women had to shout to attempt being heard.² Drew goes on to state that even a male outsider leading a campaign received more attention and respect than a traditional woman.³ This unfairness raises male opinions far above those of women. Decisions have reflected the prominent men voices, and not women’s. Some people may argue that this inequality is not significant or important; the men can represent everybody’s opinion. However, women have a different viewpoint from men, they offer the prospective of caring for the home and children. These different insights and perspectives that women have, deserve their own representation. Acknowledging multiple points of view prevents potential problems that a person or group of people foresees.

Not only do women lack a political voice in mountainous regions, they also have very little choice in their individual lives. Michael Paterniti explains in his article “The Mountains Where Women Live as Men,” that the Kanun is a medieval canon of laws which villagers in the Albanian mountain follow.⁴ The Kanun law declares that “[a] woman is known as a sack made to endure as long as she lives in her husband’s house.”⁵ Paterniti goes on to indicate that a woman might stand at her wedding with her “eyes downcast as the humble, heeled animal [they’ve] just become, and soon [will] live with [their] husband’s family, wherever they may live, in virtual enslavement, taking all of [their] orders from” their husband.⁶ This inequality in family life has been a part of the Albanian mountain society throughout history, and, has even been part of most societies at one point in history. However, the majority of groups living outside this region have progressed toward more equality between genders. The reason that more inequality exists in mountainous regions is due to their reliance on self-sustainment. The people rely on their own production of food and clothing, and the gender roles continue. One of the most important ways to balance rights is to

²Drew, Georgina. “Mountain Women, Dams, and the Gendered Dimensions of Environmental Protest in the Garhwal Himalaya.” *Mountain Research and Development* 34, no. 3 (2014) 238.

³Ibid., 239.

⁴Paterniti, Michael. “The Mountains Where Women Live as Men.” *GQ: Gentlemen’s Quarterly*, 84 no. 3 (2014) 196.

⁵Ibid.

⁶Ibid.

advance the society to allow extra time for both men and women to seize equal opportunities.

Consequently, some women in the Albanian mountains have taken matters into their own hands. There is a group known as “Burrneshas” who live in this region, and they are a woman who has pledged to live as a man and forced to lead a celibate life.⁷ There are many reasons a woman may choose to become a Burrnesha—for instance, if she is the last living member of her family—but many make the decision to live as a man to obtain equal rights. Paterniti implies that, “[f]or a Burrnesha, it was about the oath, about vowing to find a place and purpose in your family, and country, that offered no place for you.”⁸ In this mountain society, women are in a class lower than men. They are less respected, and it is obvious why women would want to become men. However, the Burrnesha population is decreasing, possibly because of the improvement in gender equality or due to the lonely life they are forced to live. It is surprising that women would go to such extreme measures to be a man, but it demonstrates the harsh reality of inequality.

Recently, Nepalese women living in alpine regions, have sought to empower women through their own perseverance. As explained in “Nepalese Mountain Climbers Promote Women’s Empowerment,” seven Nepalese women had hiked six out of seven of the highest mountains on each continent, as of August 1, 2014. They hope “to encourage women and girls... to reach new heights in their home communities.”⁹ In a later article, “Nepalese Women Team 1st to Scale World’s Highest Peaks,” the Nepalese women finished their goal on December 23, 2014.¹⁰ Through showing that women can accomplish difficult goals, these mountain climbers demonstrated women’s abilities. Women in the mountains, who were represented by these Nepalese women, showed that women can defy traditional stereotypes and go beyond their limits. This is one-way mountain societies are developing in regards to gender roles.

Despite the necessary changes in gender limitations, there are other obstacles to cross before arriving at the perfect solution. Possibly the most difficult to overcome is the precedent set by religion. Religion teaches that male dominance is the way

⁷Ibid.

⁸Ibid.

⁹Sharma, Suvash. “Women climbers meet John Kerry.” *Nepal Mountain News*, July 18, 2014. <http://www.nepalmountainnews.com/cms/archives/75058>.

¹⁰Gurubacharya, Binaj. “Nepalese Women Team 1st to Scale World’s Highest Peaks.” *Associated Press*, January 9, 2015.

things have always been and always should be. It dictates that men should preside over their families and control the actions of their wife and children. According to most religions, women are under the direction of men, and life should always follow that pattern. However, while change can be challenging, learning to compromise can be the way to conquer any wrong. For example, change may come little by little, but it can come as long as everyone works toward the same goal. When there is more than one perspective to consider, all parties can be pleased by the outcome if they compromise, and the ending situation will be better than it started.

Secondly, men and women have different roles in religion. Kyrillos Papanthimou points out in “Women, Mount Athos, and Orthodox Spirituality,” that women are not allowed on Mount Athos.¹¹ From one perspective this appears unjust. From another perspective it is necessary to preserve the sanctity of the mountain. One learns later in the article written by Papanthimou that the rule was created “out of weakness rather than spite against females.”¹² There is a fine line between equality and fairness. If this situation were equal, both men and women would be allowed on the mountain. There would be no difference between genders. However, fairness does not necessarily include equal opportunity for both genders to be on the mountain, but equivalent opportunity to reap the spiritual benefits of the mountain. In this way, both religion and fairness are satisfied.

Undoubtedly, technological development needs to occur in order to capture the abundant natural resources in the mountains. This can help mountain communities as well as those living outside the alpine area. As described in Drew’s article, there were developers that started to build a dam for hydroelectric energy. Women did not advocate the dam’s construction, because it would limit their access to the river, interfere with religious rites, and damage the water balance for future generations.¹³ Other concerns were realized when a bus filled with school children, teachers, and villagers fell down a ravine due to an unstable infrastructure that occurred during construction.¹⁴ Women of this mountainous region, understood the potential risks associated to the dam’s construction that could harm their religion, lifestyle, and the environment, which they deemed were too high

¹¹Papanthimou, Kyrillos. “Women, Mount Athos and Orthodox Spirituality.” *The Pastoral Review* July/August (2013) 22.

¹²Ibid., 24.

¹³Drew, 236.

¹⁴Ibid., 237.

to continue construction. This situation would have been more successful with a compromise, perhaps with proper regulations that would limit harm to the environment. Women were the first to recognize the potential damage the construction could cause, and if their point of view was considered in the first place this would have prevented damages to the mountain society as well as the mountain's infrastructure.

Construction projects for energy or improving life, such as, building dams, can help a mountain society if all potential problems are examined before construction starts. If inexpensive forms of energy were brought to mountain communities this would aid women in doing housework. For example, laundry and cooking would become much simpler with electricity.

Overall, to make the much-needed social and technological changes in mountain communities, developers must work with both the women and men. Women need a fair voice in the occurrences in and around their mountain homes. Societies must be willing to change one perspective at a time, and it's possible that this process could take many generations to instill new outlooks. However, if each developer, man, and woman strive for improvements in technology and gender relations, then mountain societies can approach perfection.

Honorable Mention **WOMEN IN THE MOUNTAINS, PAST, PRESENT, AND FUTURE**

By: Gabby Anderson

Gabby Anderson is a student at Copper Hills High School located in West Jordan, Utah. She recently participated in the Utah Valley University Women of the Mountains Essay Contest.

Nakoa

Shaking hands prove hardest to hang pictures with. Even so, a photograph belongs on a wall.

Nakoa brought liver-spotted and arthritic fingers to the frame again - harboring the wood of quaking aspen, with the porcelain bark still intact- its resident photograph taken from a rocky ridge overlooking a lake and surrounding grove of aspen trees. The scene was blurred, black and white, and obviously not taken by a professional, even darkened a little much in the developing liquids.

Lovely scene; thought Nakoa backing into a recliner that faced a, now hung, picture. Her silver hairs thickest in their glittering congregation about her temples, were braided back and out of expressive eyes. Both of which were trained on the lake she had visited throughout her life.

Wouldn't baby Charlotte think it pretty too?

Jennifer

"Oh, take a hike!"

A cascade of laughter picked its way down the trail.

"Clever but I'm serious about that, Jenny. Do you or don't you have a C in English?"

Jenny and a few select friends, half clad in leotards and scrunchies, hiked up a mild incline and conversed all the while.

"Stop asking me about it! I'm genuinely angry right now!" Jenny swished raven hair and mismatched earrings in an effort to look away from Jon as dramatically as possible.

“Baby, I only ask because you’re my squeeze. I have feelings for you, you know.” Jon pursued his squeeze to the far limit of the trail and took her elbow. His hand was promptly shaken off.

Down the line, another girl with a fluorescent leotard and coordinating leggings flattened one side of permed hair to grip her neck.

“You two want us to break off for a minute?”

Jenny turned her torso ever so slightly to regard Emma.

“Come up here and talk to me instead.” Emma’s flushed but picked up the pace to walk abreast with Jenny, leaving her date and another couple behind her.

“Aren’t your legs shaking?” Emma looked up from the rocks at her feet to hold Jenny’s gaze, momentarily daring a glance at Jon who scowled pointedly.

“Naw, I’ve had leg days in dance for what feels like ages.” Jenny’s eyes remained fixed to the trail ahead of her.

“How’s that going fo—” Emma began.

“Dag Spanky!” Emma’s neglected date declared from the ridge on which the friends had gathered.

Scuffed tennis shoes rested, paralyzed on the granite gouged out of the mountain side millions of years ago. The marbling and variations in the rock seemingly mirrored the patterns of thought shared by its inhabitants. Speckled lichen and deposits of minerals became machinations of fairytale creatures of which were only fit for the scene all around the group. Each line of mineral drawing irregular map-lines between the tennis shoes declared themselves the shared thoughts of the friends who all processed their immediate surroundings.

Below the group by about ten steep feet lay the object of the greatest amount of meditation: an emerald puncture in the granite mountainside. Oxidized stone wound about the lake, sporting, too, legions of grasses and weepy looking bushes huddled near each other. Distinct collections of bushes had dainty green foliage which dipped their heads into the still plane of the lake; each overlap of brush and water creating the illusion that the reflections of their

leaves were actually extensions, and each bush bloomed twice into a pale firework display. Beneath the still surface of the lake, almost nothing was visible, but somehow images of ancient creatures with gently piqued shells and an overabundance of teeth came to mind.

What if we found trilobites among the rocks? That's not a crazy idea knowing an ancient ocean dominated this whole mountain range, right? --Jenny mused as she took a long blink and reopened her eyes to stare at the peak of the nearest mountain. I wonder if even the tops were covered by ocean water.

Just at the outer bounds of where the brush lie, were innumerable quaking aspen, unceasingly spread in and up every direction. White, with ever-watchful eyes stitched in its complement, stood firmly in the grass and rock.

Jenny smiled in a knowing way, and gripped a blade of grass beside her, thinking how like this scene was to her mother's favorite story. The story about the mountain lake and dewy white trees with dozens of deer just in sight.

Charlotte

The car door is so scuffed on my side. That one probably has an exact match on my shoe too. It's pretty big.

Charlotte sat buckled into the passenger seat, more amused by the interior of the hatchback than the slow moving traffic outside. Straight hair done in two pinched braids hung at hunched shoulders as she poked at the door. Her little finger nails had been painted peach in an effort to dissuade her from biting them off. So far it was working.

Outside the sun was blistering, and a thin window did little to separate Charlotte from its immense heat. She regarded her mom's smartphone too close to her face but still not rid of glare. She tilted the screen. Peach nails darted minutely, drawing little greasy parallels on the surface.

Mama Jen's Music, the display read near the top border of the screen. Charlotte seemed satisfied upon opening the music application and turning off the phone again, another good song of Mama Jen's playing in her Hello Kitty headphones.

"Charlie, we'll be there in a few more minutes so put on some sun-screen. Charlie. Did you hear me?"

Charlotte slid a bulb of her headphone off one ear and raised her

eyebrows exceptionally far up her forehead.

“We’re going to be at the trailhead in a few more minutes so put on that sunscreen.”

Charlotte consented and lathered likely too much runny sunblock on her limbs and face.

Gravel popped and grinded under the car tires as it made a drawn pull into a “spot” near a shaded hiking trail. Mama Jen had also braided her hair back into a tight line and edged the lengthy cord of it onto her left shoulder as she layered sunblock onto the other. A sunburst scar marred the gap between her shoulder blades, now faintly liver-spotted.

“Let’s hit it! I haven’t hiked up here in ages, last time was, what? Twenty years ago?”

“Are we going to see deer, like in grandma’s picture?”

“I seriously hope so.” Mama Jen flashed a toothy smile.

Half way into the ascent, both, sweaty and unamused, took a granola-break on a boulder.

“I haven’t seen any deer.”

Mama Jen shook her head and scrunched her mouth to one side in a look that meant ‘me neither.’

With great effort on Charlotte’s part, and a few encouraging words on her mother’s, they summited a ridge overlooking Granite Lake.

“Is that a Gatorade bottle? Jeeze, pick that up, Charlie, we’ll take it down with us.”

Charlotte had ceased speaking of wildlife when the climbing got tough and silently deposited the bottle in Mama Jen’s backpack. In the same manner, she scanned the lake. A paper bag swung from the branch of a tree across the water, while five or six emptied beer cans marked the trail down to the lake like breadcrumbs.

Where are all the bushes? Nana told me everything here was green.

“It looks as though everyone else has found our little family secret. I can’t say I’ll ever forgive them for doing this to it.” Mama Jen squinted even while the sun was behind them, illuminating the silver of each beer can.

“I so wanted this to look as it did for you, now and from now on.” Mama Jen squinted harder into the distance while the lines on either side of her mouth stood out ever more.

Charlotte only further analyzed the image of a ragged, pine lake and graffiti covered rocks.

20
15



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