REVITALIZING MARGINALIZED COMMUNITIES FOR SUSTAINABLE DEVELOPMENT BY DESIGN

Tao Huang
Carbondale, Illinois, USA
Southern Illinois University Carbondale
thuang@siu.edu
Eric Anderson
Makanda, Illinois, USA
Resilient Farms and Design Studio
resilientdesignchicago@gmail.com

ABSTRACT

This paper discusses the role of design in revitalizing marginalized communities facing economical, ecological, and cultural crisis. Using two rural towns in the US and China as locations for field study, this research team conducted interviews and observations, organized workshops and class projects, and participated in alternative agriculture practices to investigate opportunities for design research and design thinking methods to be utilized in the development of agricultural production, enhancement of economic growth, and improvement of community wellbeing. The paper concludes with recommendations for designers and community activists who might be interested in sustainable development for marginalized communities.
KEYWORDS: Sustainability, Rural Revitalization, Design for Social Change, Agriculture

1. INTRODUCTION

Over the past two hundred years, as cities around the world have accelerated with their growth (Ortiz, 2013), rural small towns have been struggling with economic and population stagnation and gradual decline. As of 2017, over half of the human population live in cities (Brinkhoff, 2017) with the United Nations predicting that in 2030, 3 out of 5 people will be living in cities. As a consequence, urban areas usually receive the most attention from designers (in a broader sense of the word, which might include many disciplines that create or plan visual forms to solve problems).

We argue that not only are these rural communities worth saving, but also that designers can help to change their present trajectory of decline and degradation. Rural communities are not simply there to support cities, or for the city-weary to seek refuge. Most of them have unique cultural heritages and natural resources that are important to all mankind. What is more, we believe that while the human society is facing potential impact and uncertainty of climate change, it is essential to help these marginalized communities to continue to grow and to function as innovation proving grounds, test-beds, and incubators to develop alternatives to urban lifestyles and the energy-intensive, globalized, industrial agriculture that currently supports them.

Agricultural production is highly industrialized in many areas around the world today. Industrial agriculture requires a very specific environment and landscape conditions to be economically viable. Consequentially, it means communities with fragile ecosystems, complex landforms, and unique geological conditions are economically marginalized and must compete by employing different approaches in how they conduct business. In the past three years, our multidisciplinary research team has been working with two rural communities in two countries. Though they face similar problems, the cultural context for these problems is quite different, which necessitates vastly different design solutions. The project focuses on adding economic value to existing businesses as well as creating new products and services that are unique to these communities. The aim of this ongoing project is to understand the problems and cultural context and constraints of these marginalized communities, identify effective business and innovative practices, and then harness design thinking to find new and innovative ways to revitalize local economy and achieve sustainable development.

We intend for this project to become a catalyst for change and an agent for design literacy education to help these communities understand the value of design. Through demonstration of our design solutions, we challenge the communities to examine the status quo and find alternative paths themselves to lead them out of poverty.

2. THEORETICAL BACKGROUND

With low living and start-up cost, rural communities can pursue alternative business practices and be a hot test bed for innovative ideas. We observed that more and more designers are getting commissions or choose to participate in the revitalization of rural communities. Their government officials have enlisted designers' help to guide the economic development of these communities to enhance the quality of life for their rural residents. For instance, since 2014, the Ministry of Housing and Urban-Rural Development of the People's Republic of China launched the "Beautiful Countryside" campaign and created a "Construction and Technology Innovation Alliances" with architects, city planners, environmental scientists, and agricultural experts. Opportunities to participate in the revitalization of rural communities are abundant for designers.

At the same time, we stress that designers' responsibilities have gone beyond merely creating functional and eye-catching artefacts. Design has become an important instrument for building business and social strategies to bring about great cultural and economic changes. Ezio Manizini (2015) stated that: "Cultural activists, grassroots organizations, and design activists are converging towards a range of initiatives whose purpose is not to offer immediate solutions to problems, but to spark interest in these areas and show, often paradoxically or provocatively, that there are different ways of seeing and resolving them." (p.46)

Many rural communities' most important industry remains agriculture. In recent years, more and more people have started to question the negative environmental impact of the large-scale industrialized agricultural production that depends on non-renewable energy (Holmgren, 2002). The surge of the "buy local" movement and the rising consumer demand for "organic food", show that consumers are also concerned about issues such as pesticide and pollution associated with large-scale industrialized agricultural production. In fact, consumers are willing to pay higher prices for locally grown foods (Tarkan, 2015) because as The Packaged Facts report (a market research firm) stated, "Local has become a shorthand descriptor that makes food sound high quality, fresher, more authentic, trustworthy, environmentally friendly, and supportive of the local community." Small farmers in rural communities are well positioned to be leaders in this movement.

John Ikerd stated (2008) that "The future of farming in America is a way of farming that balances ecological integrity and social responsibility with economic viability" (p.63). So what are the alternatives? Thousands of years of human farming practices generated a wealth of agricultural and ecological wisdom, many of which are suitable for marginal lands and demonstrate this "balance" that Ikerd was calling for. Examples include China's terrace farming,

Kaner Well desert irrigation systems, mulberry fish pond circular eco-system, etc. Contemporary practices such as small-scale organic agriculture, permaculture, vertical agriculture, forest farming, are some of the forms of alternative agricultural practices that we studied (Bloom & Boehnlein, 2015; Hemenway, 2009; Holmgren, 2002; Holzer & Sapsford-Francis, 2010; Mollison, 1988; Mollison & Jeeves, 2004; Mudge & Gabriel, 2014).

In particular, small scale and organic farming such as permaculture have gained a lot of following in recent years (White & Duram, 2013). We concluded that, while smaller scale agricultural practices may not be able to compete in terms of the efficiency of planting and harvesting with large-scale industrialized agricultural production, they are considered to have higher quality, greater nutritional value, and to be more ethical (Hinrichs & Lyson, 2007). We also concluded that smaller scale agricultural practices can produce more varieties of cultivars to satisfy more diverse consumers. Centred on these alternative agricultural practices, products and experiences can be designed to attract customers, thus, create new economic opportunities.

As stated above, one of the goals of this project is to create a new "design culture": inspire residents in these communities to participate in the design process to create long-lasting changes. In the Multi-disciplinary Design Education in the UK Report (2010), Nick Leon, Director of Design London, was quoted to declare: "Successful innovation demands a systemic not a component approach to designing new products and services. Edison didn't just design and patent a light bulb – he created an entire new system that changed our world" (p.14). It is important to take a systematic approach to extend the influence of this project to more than designed artefacts. We reviewed systems theory and explored using systems dynamics modelling to map out the variables and stakeholders in the design process to understand how design can alter these factors to cause social changes. In addition, following the footsteps of Victor Papanek (1972; 1995) and Buckminister Fuller, cases of design for social change were studied. Specifically, we investigated the science of design for behavioural changes (Wendel, 2013), especially for sustainability (Bhamra, 2011; Wortington, 2009).

3. RESEARCH METHODS

Based on our literature review and preliminary research of the subject, we established two assumptions for this research project:

- First, a multidisciplinary and systematic approach must be taken to generate a wide range of solutions;
- Second, design research and design thinking strategies can provide new ideas for solving complex problems in these regions because of their human-centred approach.

Next, we moved to select two communities for our field study, Makanda, USA, and Songkou, China to conduct our ethnographic research[1]. Our research team consists of two faculty members at SIUC, several external consultants in China and the US, and one undergraduate research assistant, and is supported by 30 to 40 undergraduate students. Collectively, we conducted a field study in both locations. We conducted interviews with local residents, officials, craftsmen, business owners, and designers, with the total number around 100 people. As is often the case in ethnographic research, most of these interviews were unstructured, and some of them were conducted via emails. Visual notes were compiled and analysed. The emerged insights were put into presentations by individuals or groups of students.

We also conducted several site visits at local enterprises, including locally owned farms, craftsman studios, and small businesses:

- Businesses in and around Makanda: Dayempur Farm and Centre for Sustainable Living, Rolling Oaks Alpaca Ranch, Five Hen Farm, La Colina Linda Farm and B&B, Flyway farm, Southern Illinois University Sustainability Farm, Neighbourhood Co-op, Little River Research, Hidden Valley Vineyard, etc.;
- Businesses in and around Songkou: Chopsticks factory, bamboo weaving studio, woodworking studio, Checkerboard Bed and Breakfast, Daxi Village Ecological Education Centre (interviewed the manager only, the centre was not open to the public), Songkouqi Hotel, Time Bank Café, Songkou Library, Open Union Cultural and Creative Co. etc.

4. RESULTS AND ANALYSIS

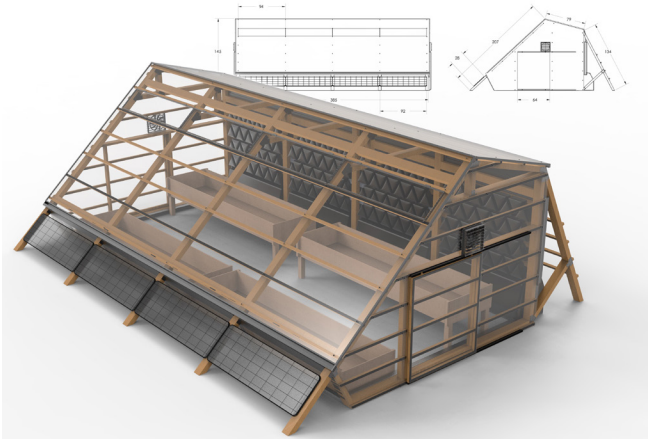
Throughout our research and design process, we have identified multiple opportunities to create new artifacts and experiences were design has the potential to play a leading role. These opportunities are divided into three categories: artifacts, marketing campaigns and strategies (they are not mutually exclusive).

4.1. Artifacts

Design for diversified and alternative agricultural production; Design for Precision Farming; Packaging unique cultural heritage, etc. Figure 1 shows a set of hand-held tools designed for small-scale farming/gardening. The student identified common user needs in this scenario and designed the tools to attract younger users. Figure 2 shows a greenhouse with temperature-regulating wall and solar panels to increase production.

[1]. Rationales for choosing these two locations are available upon request.

[Figure 1] Carbon Tools by Zachary Weddle



[Figure 2] G2 Greenhouse by Ian Herndon

4.2. Marketing Campaigns

Establish brand identities for niche and general market; Create and maintain a strong social media presence for the local business.

4.3. Strategies for Eco-tourism, agro-tourism and other Attractions

Create products with strong local characteristics and uniqueness; Envision innovative reuse of abandoned commercial buildings to support economic development of underserved demographics.

5. IMPACTS ON SUSTAINABILITY

Though we have worked on this project for three years, we still consider that it is in its early stage. As designers, we are capable of providing a new perspective to policy makers and planners. With a multidisciplinary and participatory design approach, our work will encourage sustainable practices in small businesses, help alternative and organic agricultural business to thrive, and uplift underserved communities. We realized that we are not the first, nor the last people trying to tackle rural decline. However, as designers, we are capable of providing a new perspective to policy makers and planners. By working with our users, we can visualize solutions that are easier to adopt. Though we have worked on this project for three years, we still consider that it is in its early stage. We tentatively offer the following design recommendations from what we have learned so far:

- Beyond Artifacts: Singular and isolated products and experiences cannot create high economic value and might not be sustainable. Innovative products, product platform, branding, and disruptive business models should be at the core of the revitalization of marginalized rural communities. Design solutions at all scales must be considered as a whole. We must take a systematic approach, which means we must consider the entire eco-system of products and services.
- Multidisciplinary and participatory design approach: we must take this approach in design for social change. The process might be messy and even chaotic, and the outcomes might not be glamorous or even tangible, it might require tremendous learning beyond just the design domain for the designers, but it has often proven to be the best way to realize real change.
- Simplified user experience: the development of easy-to-use, easy-to-understand service systems should not completely rely on high-tech and smart mobile devices but should fit your users' needs. In our case, high-tech products might be too expensive and even unnecessary to develop for rural communities. It is better to utilize tools, materials, and component parts readily available to residents but designers should provide creative ways to help these communities use them more effectively and in new innovative ways.

In October 2017, the World Design Summit released the "Montreal Design Declaration". The document declared that the international representatives of professional designers, architects, urban planners, landscape archi-

tects and other design-related disciplines attending the Summit had agreed to the following statement (2017, p.6-7): "Recognize the need for sufficient fiscal and human resources and capacity; Acknowledge the intrinsic capacity of design to serve as an agent of change and a source of creative transformation; Acknowledge the fundamental and critical role of design to create a world that is environmentally sustainable, economically viable, socially equitable, and culturally diverse; And confirm the value of working in a collaborative, holistic and integrated way to foster design of common benefit". The "Montreal Design Declaration" affirms our belief that though designers' roles in our society continue to evolve over time, there remains a common consensus in the design community that design is critical to economic and social development. It also reflects the consensus that designers must work together with other disciplines to help resolve difficult and complicated issues. It is this belief that led us to start this collaborative project, and it is our belief that our preliminary results prove that design is indeed crucial in helping to improve marginalized communities. It is our sincere hope that our work did contribute to the fulfilment of this grand mission of our professions.

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