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Abstract

The Republic of Tajikistan possesses the largest amount of internally produced surface water in Central Asia; however, poor irrigation management has led to water shortages in agrarian communities. In support of government efforts to reform water management, international development actors have established Water Users' Associations (WUAs) throughout the country. WUAs are non-governmental groups of irrigation water users responsible for local infrastructure maintenance, conflict resolution, and scheduling water distribution. These groups are expected to increase participation in irrigation management, the equity and efficiency of water supply to agricultural plots and by extension, crop yields and food security. Drawing on interviews with development actors, government representatives, and WUA leaders, and rural households, I show that plans to improve rural wellbeing through WUA creation are undermined by legal frameworks that limit formal participation in associations to one water user – farm managers. Reinforced by the actions and inactions of the government and development actors, this policy is drawn from and advances a fragmented understanding of the irrigation landscape, wherein the cultivation of irrigation dependent household plots is devalued or made invisible. Neglecting to actively include these plots in WUA structures can contribute to reduced household water access, prompting crop failure and increased food insecurity among rural families. This thesis contributes to ongoing discussions about the risks and opportunities associated with approaches to rural development and community-based natural resource management globally.

“WHEN OUR CROPS BURN, WE BURN”:

**HOUSEHOLD CULTIVATION, INATTENTION AND EXCLUSION IN TAJIKISTAN'S
WATER MANAGEMENT REFORM**

By

Katherine MacDonald
B.A. University of Washington, 2014

Thesis

Submitted in partial fulfillment of the requirements for the degree of Master of Arts in
Geography

Syracuse University
May 2018

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My path to writing this thesis has been long and winding, informed by encounters and conversations both in and outside of Tajikistan over the last nine years. As such, it is impossible to truly acknowledge all those who have assisted me along the way in the space of this section. Rather, I would like to thank just a few of those who have helped me in this latest part of my journey, beginning with my advisor Dr. Tom Perreault. I cannot thank you enough for support and advice over the last two years. I would also like to thank my committee members, Dr. Anne Bellows and Dr. Natalie Koch, both of whom have supported my interest in Central Asia and agriculture. A sincere thanks to Dr. Farhana Sultana who provided important guidance during the formative stages of my thesis.

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Glossary and List of Acronyms

<i>Dehqon</i> (деҳқон)	Literally translating to farmer, this term is used in English language literature preceding the word “farm” as a partial translation of <i>Khojagi-ye Dehqoni</i> (хоҷагӣ деҳқонӣ), which are private farms that were created with the break-up of collective farms after independence.
FFP	USAID Family Farming Project
FtF	Feed the Future, U.S. Government's global hunger and food security initiative
IWMI	International Water Management Institute
<i>Jamoat</i> (ҷамоат)	Sub-district
<i>Joibor</i> (ҷӯйбор)	Small ditch that runs alongside the edges of streets, from which households siphon water, either with a hose or another channel, into their housing compound to use for kitchen garden irrigation, drinking water, cleaning, etc.
<i>Kolkhoz</i> (колхоз)	Collectively-run farm during the Soviet period
<i>Kooperativi istehsoli</i> (кооперативи истеҳсоли)	Agricultural production cooperatives
<i>Mirob</i> (мироб)	Local water manager responsible for opening and closing canal gates and ensuring scheduled water delivery
<i>Rais</i> (Раис)	Leader
<i>Raisi Mahalla</i> (Раиси маҳалла)	Village or Community Leader
<i>Sovkhoz</i> (совхоз)	State-run farm during the Soviet period
TAWA	USAID Tajikistan Agriculture and Water Activity
TJS	Tajikistani Somoni, national currency
USAID	United States Agency for International Development
USSR	Union of Soviet Socialist Republics
<i>Vodkhoz</i> (Водхоз)	Short for <i>Rayvodkhoz</i> , refers to the district water management authority during the Soviet period and currently used as colloquial name for the Land Reclamation and Local Government Organization, which has replaced the <i>rayvodkhoz</i> since independence.
WUA	Water Users' Association
<i>zamin-e nazdi havlagi</i> (Замини назди ҳавлаги)	Kitchen garden land
<i>Zamini Presidenti</i> (Замини президентӣ)	Presidential Land

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Chapter one

Introduction



Photograph 1: View driving through Khatlon Province, Tajikistan. Photo by author.

Just past the main bazaar, an arched facade marks the southern edge of the Republic of Tajikistan's capital city, Dushanbe. At five o'clock in the morning, traffic already flows through the entry; four-door Ladas packed with the season's first watermelons cross into the urban center, trading places with taxis that carry passengers and goods into the countryside. Sitting in the back of her uncle's station wagon, my research assistant, Shifo, and I joined in this exchange, leaving the Soviet-era apartment I called home from 2015 to 2016, for the southern Province of Khatlon. Lingering sleep and the warm summer heat left us quiet, staring out the car windows as the urban bustle was replaced by rolling hills, their steep sides a mix of dry grass and the neat furrows of agricultural plots.

Agriculture is the mainstay of the Tajikistan's economy, sustained in an arid climate by runoff from glaciers and snowpack. Stored in the mountains that cover over 90 percent of the country's territory, this water flows to agrarian communities through vast networks of irrigation canals built when the country was a part of the Soviet Union. With the largest amount of

internally produced surface water in Central Asia, Tajikistan is “water rich,” a physical trait the government has adopted as a point of pride, commissioning brochures and pens in English with the words “Tajikistan is a water country” in 2015. Yet, funding cuts to infrastructure maintenance and changes in management institutions over the last two decades have hampered effective water delivery, decreasing irrigation water access in villages across the country.

Irrigation water shortages affect *khojagihoy-e dehqoni*,¹ private farm plots formed during post-independence land reform in the 1990s, as well as *zamin-e nazdi havlagi* or kitchen gardens, small parcels of land located near family homes and devoted to the cultivation of vegetables, herbs, grains, and fruit. Leaving tomatoes green and shriveled on the vine, and garden plots littered with the lavender and yellow blossoms of eggplants, falling before they could fruit, a lack of water access can devastate the harvests of rural households; and with it, their ability to meet the basic requirements of daily life. Looking out over his field, a resident of the village of Zafar in Khatlon Province voiced simply, “when our crops burn, we burn along with them.”

As climate change threatens to reduce rainfall and surface water availability, Tajikistan’s government has called for international support in reforming water management to mitigate the impacts of current and future obstacles to irrigated cultivation. Projects as a part of this effort have ranged from the reorganization of ministries to the focus of this study, the initiation of community-based water management programs. Despite the scale and significance of projects undertaken, investigation into the effects of these changes has been limited to case studies in development reports with questions of power and social inequality untouched.

After a three-hour drive, we arrived in the village of Chaikhona around 8:00 a.m. The streets empty as residents rushed to complete chores in their gardens or fields before the intense

¹ These plots are commonly known as *dehqon* farms (also may be spelled *dehkon*, *dehkan*, or *dekhan*) in English-language literature. The term *dehqon* farm will be used in the remainder of this thesis.

midday sun, we walked through the center of town to the office of the local irrigation Water Users' Association (WUA). With cement walls painted yellow, white-trimmed windows, and a corrugated green roof, the WUA office stood out along the road, lined with trees and the mud-brick walls of household compounds. Formed just two years ago under the direction of the United States Agency for International Development (USAID), the office door opened to impeccably polished floors, new wooden desks, and an array of glossy pamphlets, all projecting authority.

We had been sent to Chaikhona to collect qualitative data on women's experiences with irrigation by my then employer, the International Water Management Institute (IWMI). Contracted by USAID, IWMI was tasked to complete an evaluation of the "Impact of WUAs on Water and Land Productivity, Equity, and Food Security in Tajikistan." The formation of WUAs by multilateral and bilateral development organizations has been a central component of efforts to improve access to irrigation in Tajikistan, viewed as a means to decentralize control and increase the participation of local users in resource management and the maintenance of infrastructure.

We were shown into the WUA meeting room, where we were to host two focus group discussions with local women working in agriculture. Originally scheduled to take place in a schoolhouse, I was concerned that speaking about water use and supply within the earshot of WUA leaders would inhibit participants' ability to freely express themselves. But during our first group session, this did not appear to be the case. All heads of *dehqon* farms, these women were vocal about the shortcomings of local water management: broken canal gates, eroded waterways, waterlogged fields, rampant theft of irrigation water by neighbors, and above all, authorities' demands for 12 months of payment when not a drop of water flowed down their canals between

October and May. Liter bottles of fizzy water were popped open and passed around the conference-style table, sloshing as fists hit the surface during impromptu speeches and calls for new collaborations to resolve shared problems. It was clear that many of these women had been in this room before, voicing these same complaints in the presence of WUA leaders as well as other farmers. While challenges remained in working with the association, as formal, contract bearing members of the WUA, these farm managers walked into the office and belonged.

Our second focus group had a different tenor. None of the women in this discussion group were from households that owned farmland, but they nonetheless suffered from reduced water access. In addition to threatening harvests on the *dehqon* farms where they worked as agricultural laborers, a lack of irrigation water also doomed crops in their kitchen plots. Waking at 4:00 a.m. to prepare breakfast and complete housework, traveling to the fields at 7:00 am, and returning home at 6:00 p.m. to cook dinner, these women cared for their kitchen garden in stolen moments that may or may not align with the erratic arrival of water in their *juibor*, a small waterway in front of their household gate. Feet shuffling under the shiny conference room table as they exchanged awkward smiles with one another, bottles of fizzy water remained tightly capped. None of these women had been here before and they hesitated to identify the association as their water provider or the office as a space where their claims would be recognized.

The contrast between these two groups' relationship with the WUA lingered in my mind as I worked with IWMI over the next year and a half. The initiation of a community-based water management organization was expected to make services responsive to user needs, improve water access, and, in turn, ameliorate high rates of hunger and malnutrition as successful harvests increased profits and food availability for households across Khatlon Province. Yet, the above

encounter, wherein engagement with the association was mediated by the possession of farmland, suggested a challenge to realizing the intervention's 'theory of change.'

Dehqon farms are an economic mainstay of rural communities, but they are held by a minority of rural households. This limits the impact that improving irrigation on these plots will have on local food access. The transformative potential of increased water access for *dehqon* farms is further restrained by the fact that crops grown on these plots are often cultivated for export, rather than local consumption. The wages they provide to farm laborers are moreover inconsistent and inadequate – a reality that has led to widespread labor migration from rural areas. In contrast, throughout the economic disorder that has characterized the post-independence period, kitchen gardens, which are ubiquitous among rural families, have taken on increased significance as sources of fresh produce, supporting regular food access for cash poor and elite households alike.

Both crucial to sustaining rural life, *dehqon* farms and kitchen gardens are also physically connected by canal systems. In a typical agrarian landscape in Tajikistan, water flows through blocks of *dehqon* farms, passes through villages, and moves on again to farmland, repeating the pattern. In this way, both plots have suffered the effects of deteriorating irrigation infrastructure and both will need to be accounted for in management solutions. Changes in the availability or accessibility of water as a result of WUA activities will not only affect the harvest potential of *dehqon* farms, but also that of kitchen gardens. In turn, the relationship between households that only cultivate a kitchen garden and the WUA will have significant bearing on the long-term viability of these new water management institutions, as they depend on widespread, community-level cooperation in adhering to collectively agreed upon rates for service fees, water

delivery schedules, and shared responsibilities regarding infrastructure maintenance in order to effectively improve rural water governance.

Both residing within the WUA service area, both drawing water from canal systems, both cultivating irrigated plots, and both working to improve household access to food, farmers and householders with kitchen plots *should*, according to the objectives laid out in the WUA design, both be full members with equal rights to water delivery and opportunities for engagement. Academic literature has implied that the managers of *dehqon* farms are free to join WUAs in Tajikistan, but in regard to households that do not possess farmland, there has been notable silence. These gaps in explanation were filled with assumptions made by my colleagues, peers in the development community in Tajikistan, villagers I spoke with, and for a time, myself - assumptions about what we thought *should* be, rather than knowledge of what *was*.

Buried in the annexes of the year three annual report (October 2012 to September 2013) for the USAID Family Farming Project (FFP), a table labeled “Entities and their relation to WUAs” states that only *dehqon* farm managers, defined as “a person who holds a certificate from the land committee for permission to engage in agricultural/land use rights,” have “official” status in relation to the WUA (2013, 44). They are able to vote in WUA meetings through a single representative from their Water Users’ Group, a smaller organizing unit of the WUA, often formed at the village-level (Family Farming Program Staff 2013). A “village householder” meanwhile is listed as “non-farming,” despite their engagement in the cultivation of a kitchen garden, and has non-official status, meaning they cannot vote in the WUA (Family Farming Program Staff 2013, 44). Their only “role and responsibility related to the WUA” is that they can “be a member of an intra-village water committee,” groups that have not been established and are not actively being pursued by development actors or WUA leadership (Family Farming

Program Staff 2013, 44). Thus, on paper, “village householders,” active water users who are dependent on the WUA for kitchen garden irrigation, are without any recognized role within the organization.

No research on inclusivity in relation to WUAs in Tajikistan has been conducted. This is in line with a trend among studies on water in Central Asia to focus on resource governance and use with regard to geopolitics at the national and transnational level. Popular topics in this vein include large dam projects, like the Rogun Dam in Tajikistan, water flows between Tajikistan, Kyrgyzstan and Uzbekistan, and the loss of the Aral Sea viewed in connection with nationalism or conflict.² Rarely do such pieces include the voices and experiences of rural communities and as such, this body of work does not provide great insight into the apparent discordance in USAID’s approach to local water management. However, the apparent exclusion of household from management activities under USAID’s plan for WUA creation resonates with observations made in other contexts by scholars studying participatory development interventions. Namely, it has been argued that external actors often fail to account for diversity in the resource uses and requirements of community members during project design and implementation (see Chapter Three). This trend has a tendency to result in socially or economically dominant groups receiving preferential resource access or primary decision-making power, to the detriment of more marginalized segments of the community. Scholarship on this dynamic rarely differentiates impacts on groups by land tenure, yet households that only possess a kitchen garden may

² See for example Menga, F. 2015. "Building a nation through a dam: The case of Rogun in Tajikistan." *Nationalities Papers* 43(3): 479-494.; Menga, F. and N. Mirumachi. 2016. "Fostering Tajik hydraulic development: Examining the role of soft power in the case of the Rogun Dam " *Water Alternatives* 9(2): 373-388.; Micklin, P. 2002. "Water in the Aral Sea Basin of Central Asia: Cause of Conflict or Cooperation?" *Eurasian Geography & Economics* 43(7): 505.; Smith, D. R. 1995. "Environmental security and shared water resources in post-Soviet Central Asia." *Post-Soviet Geography* 36(6): 351-370.

arguably be considered of lower socio-economic status and highly vulnerable to food insecurity in the event of a loss of productive resources, including irrigation water.

In light of the potential for negative repercussions on the wellbeing of rural families as a result of project design, this thesis critically examines the inclusivity WUAs in Tajikistan with respect to households that only cultivate kitchen gardens, while drawing connections to larger debates surrounding natural resource management, land reform, and development in agrarian, and specifically, post-Soviet contexts. Following the collapse of the Soviet Union in 1991, former Soviet Republics both in Eastern Europe and Central Asia suffered the abrupt loss of systems that ensured the provision of basic daily necessities, including the productive resources needed for agriculture. Into this void, neoliberal development projects have entered. Particularly in Central Asia, the promises of neoliberal development to not only restore but improve upon the availability and accessibility of needed goods and services have not been thoroughly evaluated in academic literature.

This examination is driven by two central questions: (1) How is the need for household irrigation water situated within current discourses, policies, and programs focused on water management reform in Tajikistan? and (2) How does this treatment impact the ability of households without farm plots to irrigate their kitchen gardens in Southern Tajikistan? To facilitate focused data collection, these questions were further deconstructed into five sub-questions: (1) How are households' rights to kitchen garden water manifested legally, if at all, and what governing body is technically responsible for the provision of water to this plot? (2) How do policy and development discourses address the provision of kitchen garden irrigation? (3) How is the need for kitchen garden irrigation addressed or not through development interventions? (4) How does the status given to kitchen garden irrigation water in these areas

impact household access to this resource? (5) And what is the impact of kitchen garden irrigation access, or a lack there of, on family well-being and community relations?

I argue that plans to improve rural wellbeing through WUA creation are undermined by legal frameworks that limit formal participation in associations to one type of water user, *dehqon* farm managers. Reinforced by the actions and inactions of the government and development actors, membership practices that only incorporate farm managers into WUAs are drawn from and advance a fragmented understanding of the irrigation landscape, and more broadly, the means by which wellbeing is achieved in agrarian communities, as the cultivation of irrigation-dependent household plots is devalued or made invisible. Neglecting to actively incorporate these plots and the individuals who manage them into WUA structures may reduce household water access, prompting kitchen garden crop failure and increased food insecurity among rural families. Households that rely solely on kitchen gardens for their annual harvests will be particularly disadvantaged, deepening what is an already growing divide in rural communities based on land tenure and wealth. As community-based, non-governmental institutions whose financial sustainability is tied to the existence of locally-rooted legitimacy and integrity, passing over kitchen gardens in planning activities simultaneously threatens the ability of WUAs to function effectively by building a popular perception of these institutions as favoring farmers and disinterested in the struggles of households.

1.1 Methodology

Intent on moving beyond the limited information available in USAID reports and scholarly publications, I conducted fieldwork in Khatlon Province from May to August 2017, examining the inclusion of kitchen garden irrigation within both the legal framework and lived

practices of WUAs established or supported by USAID (see **Figure 1**). Khatlon is the nation's most productive agricultural region, famous for cotton, wheat, melon, tomatoes, cucumbers, and other warm weather crops. Despite this abundance, the province also features high rates of food insecurity and it has been selected as a target site for the U.S. Government's Feed the Future (FtF) initiative. With few exceptions, all USAID programming related to WUAs has occurred in Khatlon province, most recently under the FtF initiative. Initiating the Tajikistan Agriculture and Water Activity (TAWA) in 2015, USAID remains commitment to strengthening WUAs in this province, meaning research that occurs within this area is of immediate relevance.

Fieldwork activities were primarily qualitative. I conducted semi-structured interviews with four broadly defined groups: development actors; government officials; WUA representatives; and residents of agrarian communities. In addition, I performed archival research through the collection of relevant documents, including legal texts and project reports.

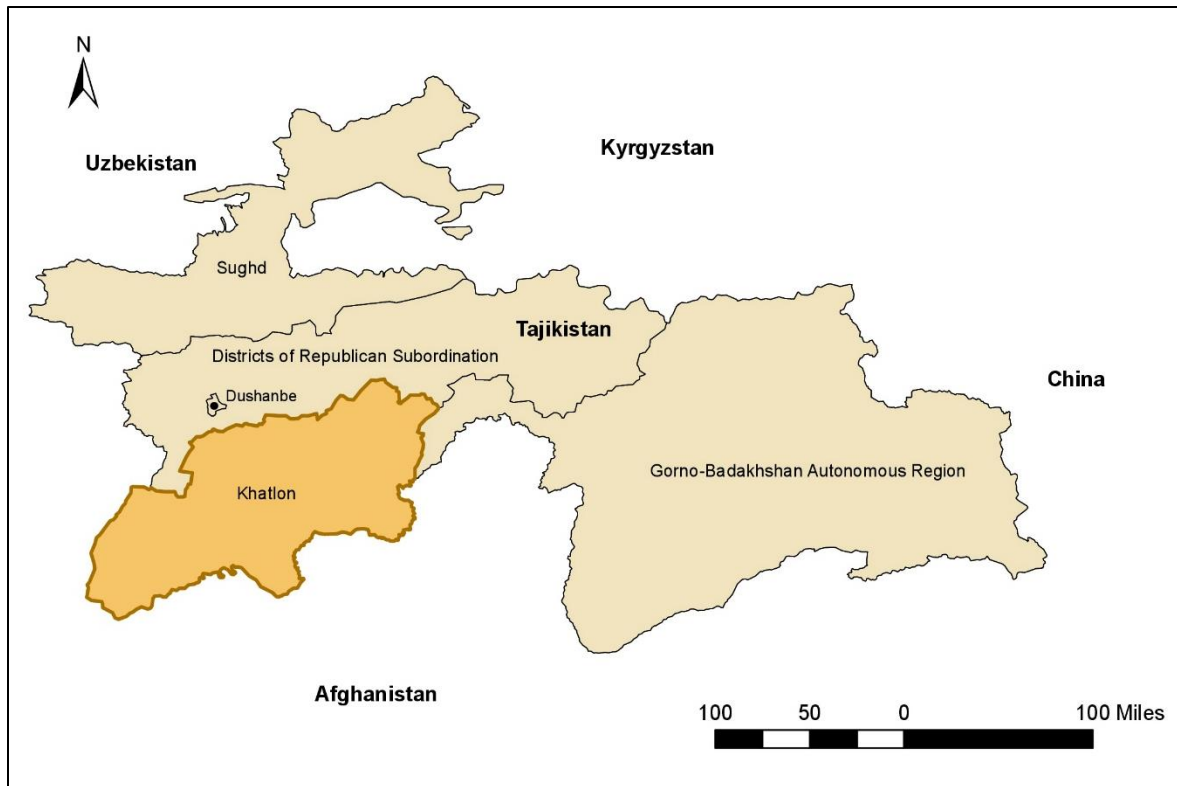


Figure 1: Provinces of Tajikistan. Map created by Sohrob Aslamy.

Details regarding the interviews conducted are provide below. The names of all interviewees and identifying details, including exact job titles, have been changed to maintain anonymity, unless otherwise noted.

1.1.1 Development actors

As referenced earlier, international development agencies and organizations have been the driving force behind WUA creation in Tajikistan. The dynamics and implications of this process will be expanded upon in Chapter Two. While multiple development actors have been involved in WUA promotion, this thesis focuses specifically on WUAs established or supported (through the provision of grants or trainings in the post-formation period) by USAID. USAID has been one of the most active organizations in this work, funding the creation of 60 WUAs in the last 14 years. Relative to other agencies and organizations involved, USAID is also more consistent in documenting project activities. This allows for a review of their approach that is not exclusively dependent on agency staff, who are subject to frequent turnover and often responsible for a large portfolio of development initiatives with limited knowledge of individual project specifics.

USAID agency representatives and project staff were open to discussing their work and I held interviews with the following individuals.

- Saifudin, Water Specialist for TAWA – Saifudin has worked on all of USAID’s previous initiatives involving WUAs (See Chapter Two). Deeply interested in the project success, he was also frank about the challenges faced in establishing these organizations. We met formally for interviews on four separate occasions and he was instrumental in introducing

me to colleagues, WUA staff, and providing me with project information. Our communication was primarily in English.

- Abdullah, Extension Specialist for TAWA – Abdullah was responsible for project activities related to the cultivation of household plots and nutrition programming. He has worked with a variety of agricultural development projects over the last several decades. My interview with Abdullah was primarily conducted in Tajik.
- Medina, Home Economist for TAWA – Working under Abdullah, Medina organized and held community-level trainings on issues related to household agriculture and nutrition. During our interview, Medina and I exclusively spoke Tajik.
- Matthew, Agricultural Specialist for USAID – Mathew is a USAID employee who is responsible for overseeing the implementation of TAWA which has been contracted to Chemonics International. This interview was held in English.
- Douglas Vermillion, Former Consultant for USAID – Douglas Vermillion supported USAID’s primary agricultural development project prior to TAWA, the FFP, during which 60 WUAs were created. He requested that I use his real name, with the understanding that those interested in the reports he prepared for USAID regarding WUAs can be found online. All our communication was in English.
- Dilbar, Lawyer – Specializing in legislation related to land tenure, Dilbar has worked on several USAID agricultural development projects as a consultant. We only communicated in English, though we did discuss the interpretation of legal texts written in Tajik.

With the exception of Dilbar, a voice recorder was used with the permission of the respondent in all of the above interviews.

In addition to speaking with USAID staff and project employees, I also interviewed several individuals who worked for local non-profits. Their names and positions are listed below.

A voice recorder was not used for these interviews.

- Timur, Representative from International Secretariat for Water in Uzbekistan – Timur and I discussed Soviet organization of water management activities in English.
- Jamila, Head of local NGO – Jamila’s NGO works closely with women living in rural areas, specializing in support for crop cultivation. We met in her office to discuss gender in relation to WUAs, communicating in a mix of Tajik and English.
- Umed, Lawyer for Consumers Union of Tajikistan – Experienced in working with public utility officials, consumers, and international development organizations, Jamshed helped to clarify the practical implications of water legislation. Our conversation was a mix of English and Tajik.

1.1.2 Government officials

While development actors have been central to WUA creation, this process has hinged on the approval of the national government. State officials in Tajikistan have worked with varying degrees of enthusiasm to amend irrigation management policies and legislation to support the long-term functioning of WUAs as local-level irrigation authorities. Understanding the perspectives of government officials thus becomes essential to understanding how the WUA membership is viewed legally and in practice.

Organizing interviews with government officials has become increasingly difficult in Tajikistan, and scholars have faced severe repercussions for work in-country that is seen as suspicious, anti-government, or challenging established authority. While my research is not

intended to be politically provocative, in order to avoid the potential for misinterpretation, I only interviewed government officials with whom I had a personal connection. This resulted in a more limited pool of data to draw on in my analysis of government-level perspectives on the status of kitchen gardens in WUAs, but I nevertheless feel that the approach used in securing these interviews was important to my long-term ability to do research in the country. None of these interviews were captured with a voice recorder.

Interviews were held with the following three government officials:

- Jamshed, Representative of the State Agency for Anti-Monopoly Policy and Enterprise Support under the Government of Tajikistan – The anti-monopoly agency is responsible for approving changes to water fees levied by government irrigation authorities, which are often collected by WUAs. They have also been involved in reviewing WUAs’ rate of irrigation fee collection. This interview was conducted in Tajik.
- Zebo, Head of Water Users’ Department within a Land Reclamation and Irrigation Authority (not within Khatlon Province) – In this position, Zebo is the government authority directly above WUAs in the hierarchy of irrigation water governance and thus is responsible for everyday communication and coordinating activities with these groups. We primarily spoke in English.
- Muboriz, High-level representative of the Agency for Land Reclamation and Irrigation – The agency where Muboriz works is responsible for the management of irrigation water at the national level and oversees regional and district level water authorities. We spoke in Tajik.

A graphic representation and more detailed discussion of the structure of water governance is provided in Chapter Two. In addition to speaking with these government officials, I attended a

joint meeting of employees from the Agency for Land Reclamation and Irrigation and the Ministry of Energy and Water Resources, which is responsible for policy development related to water use in Tajikistan. The meeting held to discuss the recently released the “Water Sector Reforms Programme of the Republic of Tajikistan for 2016-2025.” To supplement interviews with government officials, I collected copies of water management legislation and national policies in Tajik and English, as these are inconsistently available online. This legislation will be reviewed in Chapter Three.

1.1.3 Members of agrarian communities

Bringing the complexity and diversity of the lived experiences of men and women cultivating kitchen gardens to the forefront of conversations about the impact of WUAs on rural wellbeing is crucial to supporting responsible development that is accountable to project “beneficiaries.” While working for IWMI in 2016, they did conduct a household survey that solicited information on kitchen garden crop cultivation, irrigation, and water service providers in Khatlon. There were, however, few open-ended questions and little opportunity for respondents to elaborate on the reasons behind cropping practices, water shortages, or interactions with water service providers, and the effect these had on their lives. As a result, this survey failed to clarify the de jure or de facto relationships between WUAs and households, and in general, may be critiqued as presenting an oversimplified or incomplete understanding of the status of irrigation for kitchen gardens, with the options for responses to questions of water quantity and quality limited to a respondent’s degree of satisfaction. Learning from the shortfalls of this survey, I chose to meet with villagers to discuss water supply and use unencumbered by

the restrictions of a survey, but still facilitated by guiding questions during my researcher for this thesis.

As I had limited time for fieldwork, I concentrated my village-level research activities within one district, Nosiri Khusrav (See **Figure 2**).

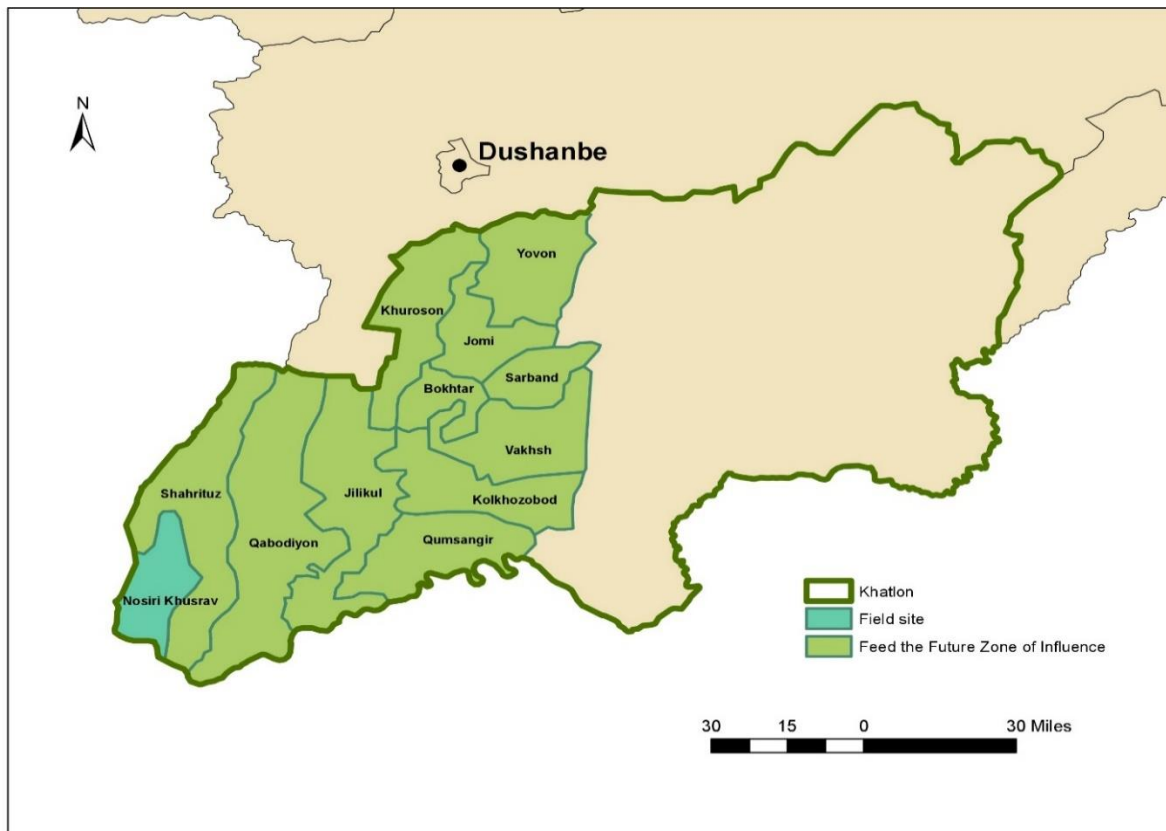


Figure 2: Districts of Khatlon Province, Tajikistan showing field site, Nosiri Khusrav district. Map created by Sohrob Aslamy.

Nosiri Khusrav is located in the southwest corner of Khatlon Province, abutting Uzbekistan and Afghanistan. By focusing on one district for the bulk of my qualitative research, I sought to gain a deep understanding of the environmental and social conditions of the study site, which would not have been possible with a multi-district approach. Nosiri Khusrav was selected as my target district on the following bases: (1) it is one of the 12 districts included as FtF ‘Zones of Influence’; (2) it has multiple WUAs supported by USAID; (3) its population is dependent on irrigated agricultural cultivation as a primary livelihood activity; and (4) it was characterized by

respondents to a 2016 survey by IWMI as having significant challenges with kitchen garden irrigation (See Chapter Two). During this stage of my research, I was based in the neighboring district of Qabodiyon, where I stayed with a local family.

Irrigation water management in Nosiri Khusrav is overseen at the district level by the Land Reclamation and Local Government Organization (known colloquially and in scholarship on Central Asia as the *vodkhoz*). The *vodkhoz* is responsible for water provision, maintenance, and operation along primary and sometimes secondary irrigation canals. Responsibility for water delivery, maintenance, and operation along tertiary canals, and occasionally secondary canals, is then placed with WUAs. In Nosiri Khusrav, five WUAs have jurisdiction over hydrological territories stretching across three sub-districts, known as *jamoats*. All five WUAs were included in my study, allowing for a look at how WUA membership policies were understood and put into practice within different associations. Information on WUA coverage area is in **Figure 3**.

Figure 3. WUA Coverage³

WUA	Year Est.	No. villages	No. households	Covered population	Kitchen Gardens		<i>Dehqon</i> Farms		Presidential Plots	
					No.	Ha.	No.	Ha.	No.	Ha.
1	2013	6	759	3,279	759	235	198	1,971	170	33
2	2014	3	756	3,780*	756	370	89	486	53	36
3	2013	4	1,568	7,841	1,568	52	134	1,132	d/k	16
4	2013	12	2,984	11,800	2,984	1,008	525	1,500	0	0
5	2014	5	600*	3,000*	600*	120	550*	1,300	d/k	25

³ This information was collected verbally from WUA leaders, however, not all had it available at the time of our meeting. The number of households, plots, and size of the population is continually in flux as internal migration, population growth and the division of land holdings continue. In rural areas official government records of these changes are often out of date or may be nonexistent. One asterisk means that WUA staff did not know or could not access this number at the time of our interview and so provided an estimate. When the covered population was unknown, but the number of households was known, the population size was estimated using five people per household based on the recommendation of local leaders. When local leaders felt they were unable to estimate, “d/k” has been written. The land size represents total holding rather than cultivatable land. “Ha.” is an abbreviation for hectares.

Data in this table is self-reported by WUA staff. The names of all WUAs have been removed to support anonymity and replaced by the numbers 1-5. These will be used consistently throughout the remainder of this thesis.

There are four primary types of agricultural land in Khatlon: *kooperativi istehsoli* (agricultural production cooperatives), which are similar in size (300 hectares or more) and structure to Soviet-era collective farms; *dehqon* farms; *zamini presidenti* (presidential plots), parcels of land distributed to families by presidential decree in 1995 and 1997, that range in size from 0.03 to 0.4 hectares; and kitchen gardens, which are under one hectare in size. Among these *dehqon* farms, kitchen gardens, and presidential plots are the most prevalent. In this study, I have chosen to focus on the relationship between kitchen gardens and WUAs, and do not analyze the position of presidential plots or *dehqon* plots, referencing them only as a basis for comparison. While the inclusion of presidential plots in my research would have provided a fuller picture of the water management landscape, the addition of another plot would have negatively affected the depth of the research I was able to perform in the allotted time. Kitchen gardens were selected over presidential gardens as they are significantly more common. When held by families, presidential plots are also less frequently used to cultivate food products that will be consumed by the household. Often far from canals or living quarters, these plots are instead sown with animal fodder that can grow with rainwater alone. As a result, WUA impacts on water access for kitchen gardens, as opposed to presidential plots, will have more bearing on household welfare.

To ensure a diversity of perspectives, interviews were completed with water users in two villages within each of WUA service area, with the exception of WUA 5, in which case only one village was visited. Villages were selected jointly with WUA staff. An overview of the

demographics of these villages is included in **Figure 4**. Village names have all been replaced with common place names in Tajikistan.

Figure 4. Village Population⁴

WUA	Village	Population	No. Household	Kitchen Garden		<i>Dehqon</i> Farms	
				No.	Ha.	No.	Ha.
1 ⁵	Guliston	-	170	-	-	-	-
	Faizobod	-	-	-	-	-	-
2	Navobod	680	260	260	59	26	86
	Choikhona	880*	176	176	21*	45	87
3	Bahoriston	789	200	200	24*	16	d/k
	Zafar	85*	17	17	10	0	0
4	Tojikobod	580	58	58	7*	46	138
	Ayni	350	48	48	7.2*	5	23
5	Sebiston	2,324	250	250	40	20	d/k

In some cases, WUA staff introduced me directly to households, however, it was more common that they first introduced me to the *raisi mahalla*, who then brought me to different households. All household interviews were audio recorded and conducted with the support of a local university student, who acted as a research assistant. Raised in the neighboring district of Qabodiyon, the research assistant had herself been the manager of a *dehqon* farm in Nosiri

⁴ This data was collected verbally from the *raisi mahalla* of each village. While this data may have been available at a local government office, I could not access this information without special permission and it is likely to have been out of date. While they may have had a better sense of the current status of their village than is recorded intermittently in government documents, not all *raisi mahallas* could readily provide or possessed the requested information. As in Figure 2, one asterisk means that the *raisi mahalla* neither knew nor could access this number in the time of our interview and they have provided an estimate. When the covered population was unknown, the number was estimated using five people per household based on the recommendation of local leaders. When the total hectares of kitchen gardens were unknown, a number was estimated using 12 *sotiq* at the suggestion of the *raisi mahalla*, except in the case of Tojikobod, where the *raisi mahalla* felt the number should be calculated using 15 *sotiq* per household. One *sotiq* is equal to .01 hectares.

⁵ Information for this WUA territory is blank as the WUA leader could not locate the information during the time that I was in Tajikistan. I began collecting this data after my interviews with the *raisi mahalla* of Guliston and Faizobod and they were unavailable on the phone for a follow-up discussion to provide these numbers.

Khusrav for several years before an accident led her to give up her land and return to school to study water resource management. Her insights on my research were invaluable.

In total I interviewed 40 individuals from households that do not possess a *dehqon* farm and seven individuals who do possess a *dehqon* farm. I felt it was important to primarily speak with households that *only* have kitchen gardens to account for the potential that the possession of a *dehqon* farm, and thus the opportunity for WUA membership, may impact their kitchen garden water access and overall family wellbeing in ways that fundamentally diverge from the experiences of the majority of rural households.

Highlighted by scholars in feminist political ecology, the control of and access to resources may also differ along gender lines (Rocheleau et al. 1996). I did not, however, specifically target men or women in my interviews; choosing, instead, to ask who in the household was most comfortable speaking about the kitchen garden cultivation. In Tajikistan, as in the rest of the world, space is gendered, with the bounds of public and private space traditionally accorded to men and women, respectively. While women are traditionally more involved in cultivating the kitchen garden than other agricultural plots, as they are located within or near household compounds, men also assist in tending to these plots, particularly in tasks such as irrigation. In recognizing men's role in agricultural production on household plots, I seek to avoid an essentializing approach to understanding intra-household gender roles and acknowledge that rather than rigid, the division of labor within household units is responsive to changing socio-economic conditions, including out and return male labor migration, war and conflict, employment opportunities, age, health, family size and composition, etc. This is done with the knowledge that a failure to account for this complexity can lead to a reductionist perspective on women's relationship with kitchen gardens, wherein, following Cecile Jackson (1993, 1948), "a

linkage...is either assumed or asserted and taken as prescribing a course of action in which women are mobilized” to act by development organizations in a way that places added burdens on their time or energy.

Of the 40 households, I had 18 female interviewees, three from female-headed households, and 22 male interviewees, all of whom were from male-headed households. Among dehqon farm holding households, two were female and all were from male-headed households. Other background information on households, including number of household members, primary and secondary sources of income, the size of plots, the number of cropping cycles for each plot, and types of crops grown during these cropping cycles, was also collected to help contextualize agricultural practices and livelihood conditions within Nosiri Khusrav.

1.1.4 WUA representatives

TAWA staff organized a meeting to introduce me to the acting management of the five WUAs in my target district of Nosiri Khusrav. After this initial introduction and presentation of my research project, I organized interviews with staff from the five WUAs on separate days throughout the months of July and August. In total, I interviewed the chairman of three WUAs and two WUA engineers, both of whom were effectively acting as the chairman. Basic background information for these individuals is provided in **Figure 5**.

Figure 5. WUA Staff

WUA	Position	Gender	Main Income	Kitchen Garden		<i>Dehqon</i> Farm	
				Ha.	Primary crops	Ha.	Primary crops
1	Chairman	Female	<i>Dehqon</i>	0.13	Vegetables	31	Cotton/wheat
2	Chairman	Male	<i>Dehqon</i>	0.21	Vegetables	43	Onion/wheat
3	Chairman	Male	<i>Dehqon</i>	0.09	Orchard	6	Orchard
4	Engineer	Male	<i>Dehqon</i>	0.12	Vegetables	7	Cotton
5	Engineer	Male	<i>Dehqon</i>	0.30	Vegetables	7.82	Cotton

Over the last nine years that I have traveled to Tajikistan, I have worked through my research and in my daily life to understand how water is brought to fields, and from the fields, food is brought to the table – both substances passing through contextually specific ecologies, infrastructure, financial stipulations, legal systems, cultural practices, and social norms. But this experience does not mean that I have or ever will move beyond the process of seeking understanding into full comprehension, as I was not born into or raised in the country. While I studied Persian in college and have developed a strong knowledge of the colloquial Tajik language used in Southern Tajikistan, I am not a native speaker and undoubtedly miss nuances in my conversations with interviewees. As referenced above, to mediate the impacts of this bias in my research, I hired a local university student to travel with me to rural areas and assist with interviews. Her working knowledge of English and my working knowledge of Tajik complemented one another to ensure that interview questions were asked, and answers understood, as accurately as possible. However, linguistic bias remained in that we only spoke with interviewees in Tajik. While Tajik is the official language of Tajikistan, is not the language some interviewees spoke in their home. Nosiri Khusrav is close to the border with Uzbekistan and a number of interviewees were more comfortable speaking in Uzbek, which neither my research assistant nor I myself understood well. As a result, some respondents felt unable to fully express their perspectives on issues raised. Positioned within specific social relations, I do not claim the research presented in this thesis or the analysis drawn from it to create knowledge that is universally applicable to my research communities or Tajikistan as a whole.

At times, my language skills have allowed me to slip into a crowd or the back of a taxi without calling attention to myself. However, I am aware that my status as an American, a

woman, and a student informs the nature of the information shared with me and my own ability to interpret it—often painfully so, as I watch the faces of would-be interviewees fall when I emphasize that I am not a donor and do not work for a development organization (a process complicated by the fact that I share a name with the head of USAID in Tajikistan, Katie McDonald). Though my gender, nationality, and occupation have at times facilitated my research, as I am seen as non-threatening and can enter spaces that are otherwise off limits to men or those with more “official” vocations, being seen as non-threatening can also carry an assumption that I lack the social capital or connections to promote real change and thus, my work is of little consequence. In my capacity as a researcher, I do however, intend for my findings to be of consequence.

A fellow graduate student in geography once commented that non-nationals are either pushed or pulled to Tajikistan. As it stands, the English language narrative on this country is dominated by those who were pushed to Tajikistan—that is, by individuals who perceive themselves to be stationed in an agrarian “backwater” by their government or organization and write reports that invariably begin with the statement “Tajikistan is the smallest and poorest country in Central Asia.” In my work I aim to challenge this statement, rejecting the notion that the size of territory or per capita income can act as a stand in for understanding internal conditions. As someone pulled to the country by the manifold layers of political, economic, religious, ethnic, and linguistic difference that exist within its borders, I hope that in time, the voices of those who are most familiar with Tajikistan’s dynamic nature gain prominence in the discourse on this nation. By working with university students in my research, I aim to build local capacity to conduct and produce qualitative research that can better inform the direction of national development policy. In this thesis, I seek to contribute to the deconstruction of this

unidimensional idea of a poor agricultural nation by highlighting how the erasure of difference in the possession to land can be result in the reduced access to productive resources, namely water, threatening the ability of rural households to ensure adequate food availability and promote family wellbeing.

1.2 Thesis structure

This thesis is composed of three chapters that build on one another chronologically, moving from the initial conceptualization of WUAs in Tajikistan, through their function on-the-ground, and ending with a discussion of project impacts. The introduction of WUAs is not in itself a unique or novel approach to water reform and rural development and has been employed by development organizations and agencies globally. Chapter Two begins by tracing development actors turn toward community-based natural resource management organizations as an intervention to strengthen rural livelihoods, a trend informed by the rising popularity of “participatory” development and decentralized natural resource management. Focusing on water, this chapter explores the introduction of WUAs as a response to dissatisfaction with efficiency and equity of water delivery by state-run irrigation management institutions. Bringing the scale of analysis from the global level to Tajikistan, the structure of water governance just prior to and after the dissolution of the Soviet Union is reviewed, with attention to emergence of management gaps that WUAs were intended to fill. This is paired with a discussion of the changing significance of irrigated agriculture in Tajikistan, and Nosiri Khusrav specifically, during the late 1980s and 1990s, as rural communities became more reliant on the cultivation of irrigated crops at both the farm and the household-level to ensure regular access to food. WUAs are framed by

USAID as an intervention to increase local food security and Chapter Two argues that this outcome is dependent on improving water access to both *dehqon* farms and kitchen gardens.

Chapter Three continues a review of scholarship on community-based natural resource management organizations, focusing on critiques of these institutions when they are created in the context of development projects. Namely, empirical evidence from the last several decades has demonstrated the potential for these institutions to exclude certain segments of society both formally, by barring their membership, and informally, through organizational practices that have socio-cultural significance and effectively prohibit participation. In the case of WUAs, formal and informal exclusion can be woven into the design of the association, both as they exist on paper and as they are put into place. Turning to the case study at hand, I draw from my empirical data to examine the status of kitchen garden cultivators in the legal framework establishing WUAs in Tajikistan. This is followed by an examination of the inclusion of these same cultivators as presented and practiced by government officials, USAID affiliated development workers, WUA leaders, and households who only cultivate kitchen gardens. Based on this analysis, the chapter concludes that despite professed support for the extension of WUA membership to households with only a kitchen garden, the failure of those active in project design and implementation (i.e. government officials, development workers, and WUA leaders) to actualize this understanding has in effect carried out a strict interpretation of existing national legislation, and formally excluded these households from membership.

Building on the argument put forth in the previous chapter, Chapter Four draws from literature on community-based natural resource management as well as interviews with rural households, government officials, and WUA leaders to explore the consequences of the exclusion of kitchen garden cultivators from formal participation in associations. Globally,

scholars have reported that instances of formal or informal exclusion in community-based natural resource management organizations have resulted in the production or entrenchment of uneven access to resources, and in connection, reinforced social and economic inequality between “beneficiary” populations. In Nosiri Khusrav, all the WUAs currently operating were constructed within the last five years and few have prompted dramatic changes in water access for any group, yet data collected nevertheless suggests the potential of these organizations to bring about impacts that adhere with those seen internationally. Specifically, this chapter presents evidence that a failure to include households with kitchen gardens in WUAs can lead directly to a loss of irrigation water for these plots as well as indirectly deepen community divisions along land tenure and economic lines and threaten the organizations’ local legitimacy.

The thesis concludes by reflecting upon the potential for a shift in the structure of WUAs to become more inclusive and effective institutions. It is my hope that the findings of this thesis are not viewed solely as a critique of development practice, but rather as identifying an opportunity for timely and positive change in light of ongoing efforts to revise national irrigation legislation and USAID projects to strengthen the management capacity of WUAs. In this final section, I draw on and contribute to emerging literature on multiple use water management systems.

Chapter Two

The logic of community-based water management: The case for WUAs in Tajikistan



Photograph 2: Desolate mountains in Khatlon Province, Tajikistan. Photo by author.

Introduction

The village of Ayni in Tajikistan's southwestern district of Nosiri Khusrav lies in a flat plain between a set of high hills, known to locals as the *kuhhoi kharob*, or the desolate mountains. As we drive down the dusty road to his home, the *raisi mahalla* of Ayni explains that in the seventh century, Ali, the cousin and son-in-law to the Prophet Muhammad, was traveling through this valley and decided to rest for the night. Letting his horses loose, they ran up the side of the mountains, which were covered with lush vegetation. The next morning when he called for his horses to return, they did not come. He repeated his call, but still they remained in the mountains. With his third call, the horses slowly came down to meet him. When they arrived, he chastised them, asking "why didn't you come when I summoned you?" The horses answered that the mountain grass was so sweet and so fresh that their appetite for it could not be sated. To prevent future travelers from becoming trapped in this place, Ali pointed his staff at the mountainside and transformed soil, preventing the growth of any plant life. The hills now stand bare, covered only by rocks and dry earth.

Jahongir, a resident of Ayni, describes how their village once stood in juxtaposition with these *kuhoi kharob*. In 1978, he moved from the neighboring district of Qabodiyon to this village for its bucolic conditions. A prime area for cotton cultivation, significant investment had been made to develop the village during the Soviet period. Fruit trees flourished, and water flowed freely through concrete-lined canals, known as *latoks*.⁶ But now, the gardens and streets of the village have come to match the mountains behind them, and conditions are driving residents away.

Beginning in the 1990s, Ayni experienced a steady loss in water access, as, according to the *rasisi mahalla*, the pump which fed water to their canal stopped working. Installed during the Soviet period, old age and a lack of regular maintenance caused the motor to burn out and the district water authority has not allocated funds for repair. During post-independence land reform, the village was also burdened with debt inherited from the collective farm that employed them under Soviet control. The *rasisi mahalla* said they still owe over 45,000 Tajik somoni (TJS)⁷ (over USD 5,000) to the government for electricity used when the pump functioned during the Soviet period. Now, water trickles



Photograph 3: Repurposing Soviet period latoks to capture and store drinking water and feed cattle in Khatlon Province, Tajikistan. The separation of these canal pieces from their larger structure indicates a sense among villagers that the irrigation system will not be restored to its Soviet extent. Reclaiming infrastructure which once literally and symbolically connected villages under national water management and harvest quotas, the purpose of these canal pieces has now been turned on its head as they serve the individual needs of households struggling to survive in a social, political, and economic context being reshaped around neoliberal ideals of individual, privatized resource control. Photo by author.

⁶ Word describing precast concrete flumes, raised on pillars or set into the ground.

⁷ As of July 1, 2017 one USD was equal to 8.8 TJS according to the National Bank of Tajikistan.

down the canal that runs along the main road for just a few hours each week, and most households have resigned themselves to the fact that they cannot cultivate any crops on their kitchen garden plots. This past year, Ilhom, a resident of Ayni, invested more than 300 Tajik somoni (USD 33, approximately one sixth of annual rural income) into growing corn on his household plot, but because of a lack of water, there was no yield. To survive, most households rent land in a nearby area, which is an added expenditure, or send a family member to a “place that has water,” and thus job opportunities, be it as close as the neighboring village or as far away as Moscow, Russia. The economic effects of water shortages on the village have been severe, with the only store in a 30-minute drive shut down as the owner was supplying food and household products to the community almost entirely on credit and could no longer stay financial solvent.

Intra-village conflict has emerged in tandem with water shortages. In answer to my question about the nature of conflicts, the *raisi mahalla* held up his right ring finger, which appeared unusually short. He explained that last year someone in his village was opening the water gate in the middle of the night, effectively rerouting water away from their neighbor’s plot and directing it toward their own. Staging a stakeout, the *raisi mahalla* grabbed the offending party and in the process, the man bit off the end of the *raisi mahalla*’s finger while attempting to break free. Though this ordeal left him with frayed nerves and two-thirds of a finger, the *raisi mahalla* has continued his work to improve water access in the village, attending *jamoat* (sub-district), and district meetings and speaking personally with the Minister of Water and Energy. Relief, however, has yet to materialize. Far from any urban centers, the *raisi mahalla* explains that their problems are easily overlooked by district or national water authorities. Unless their situation changes, his community may soon become *dehai kharob*, the desolate village.

Hoping to decentralize water management and harness the commitment of rural residents to efficient irrigation, USAID, in coordination with the government, has established a WUA that covers Ayni and surrounding villages. This WUA is intended to improve irrigation management and local water access with concomitant, positive effects on community cohesion, livelihood opportunities, and food security, which all deteriorated in Ayni with growing water shortages. The changes in material conditions experienced by residents of Ayni over the last three decades were felt by communities across Tajikistan, the product of largescale transitions in tightly linked structures of political authority, economic planning, and water governance.

In this chapter, I attend to these transitions, locating the introduction of WUAs within shifts in the management and use of irrigated agriculture in Tajikistan across time—with a focus on the latter half of the Soviet period, civil war, and independence—as well as space, by pairing a nation-wide examination with information from the district targeted for this investigation, Nosiri Khusrav. I argue that current conditions demand the creation of WUAs that are responsive to multiple uses and users of irrigation water. Economic decline following the fall of the Soviet Union has increased rural communities' reliance on both the cultivation of irrigated crops at the farm-level and the household-level to ensure regular access to food and WUAs must incorporate both uses of water into their structure if they are to make the desired impact. With this contextual background, I move on to explore the water uses and users served by WUAs in the eyes of government, development, WUA, and village representatives in Chapter Three and the implications of this in Chapter Four.

While directly in response to local conditions, the choice made by international actors like USAID to push for the introduction of WUAs in Tajikistan cannot be understood in isolation from broader trends in development theory regarding the most effective strategies for water

reform and management. Over the last five decades, support for “participatory” development and decentralized natural resource management has informed the rise of community-based natural resource management organizations as a popular method for ‘advancing’ the lives of rural communities. While marking a more or less radical break in development theory, this approach to resource management has been adopted by neoliberal institutions, whose paradoxical role in “community-based” development has resulted in the production of particular models for the incorporation of users into governance processes, rewriting the relationship between agrarian communities, resource use, and decision making into a replicable formula for effective management. With the foundational objective of making water delivery more efficient and equitable, WUAs stand as one type of these organizations. Recognizing that the logic behind WUA formation in Tajikistan is also a product of historical processes occurring outside the country’s borders, I precede my discussion of in-country conditions by reviewing the rationale behind these associations and common applications of this intervention in the context of rural development programs globally.

2.1 Rethinking the role of the community in natural resource management

Water, by nature, is difficult to contain, flowing through terrestrial ecosystems replete with the legal, political, economic, and cultural features of human society, and thus exists in a state whereby it is constantly, and simultaneously being transformed in its materiality and transforming the bio-physical and social landscapes. This understanding of water, as moving within a hydrosocial cycle distinguished from the hydrological cycle, which otherwise limits the scope of water’s interaction to the “natural” environment, is now well accepted in subsets of geography like political ecology and cognate fields of study, and has become as Tom Perreault

(2014, 234) notes, “something of a truism.” In ascribing to this argument, water is controlled by processes both outside (e.g. precipitation, evaporation) and within spheres of direct human influence; both material, in the form infrastructure construction, maintenance and operation, and immaterial, in the form of cultural beliefs and institutions (Perreault 2014). As this paper is concerned with surface water in its utility for irrigating agriculture and promoting food access, it will focus on this second set of processes, those within direct human influence. The nature of social control over water, and indeed all resources, is intimately connected with relations of power. As such, this relationship is not static; rather, it changes over time, evolving in response to shifts in social arrangements and needs.

WUAs, as social institutions through which water is controlled, emerged in their current form through development interventions in the last half century, informed by frustration with state-centric water management and the rising prominence of decentralized resource governance and participatory projects. Enthusiasm for these approaches to rural development and belief in their ability to bring about more equitable and efficient resource management continue to serve as the grounding rationale for the creation of WUAs. In light of this, the following portion of this section is devoted to examining, in more depth, the scholarship and social context that brought about the identification of WUAs as a globally applicable development strategy.

2.1.1 Participation

Encouraging local participation in projects that set out to “advance” the wellbeing of populations is not at its core, a novel phenomenon. Originating in the colonial projects of the twentieth century, scholars note conscious efforts to gain local buy-in to development programs throughout the 1930s (Guijt and Kaul Shah 1998) and 1940s (Hickey and Mohan 2004), as a way

to reform existing social organization and cultivate notions of imperial subjectivities. After World War II, local participation remained a feature of development programs, though Nici Nelson and Susan Wright (1995, 2) note that the intended effect of this strategy differed slightly from the past, as interventions looked “to transform a traditionally isolated, subsistence peasantry into *participants* [emphasis added] in a modern economy and in the politics of the nation state.” While this aim arguably remains a feature of many contemporary development projects, the rhetoric surrounding participation began to change in the 1970s and 1980s, as the term moved from describing a passive cooperation with project activities or end goal of a project to a methodology for project implementation and sustained impact.

Building on calls in the 1960s to give “voice to the voiceless,” non-governmental and governmental organizations alike sought to reform the expert oriented development practices that dominated the sector to incorporate the knowledge and skills of target populations in the 1970s (Guijt and Kaul Shah 1998). Associated with an extensive list of beneficial attributes, participatory development was argued to bring about more inclusive and transparent decision-making processes, facilitate creative problem solving, result in project designs better suited to local conditions, and promote long-term investment in the preservation of project institutions (Reed 2008). The absence of local participation in the research, planning and implementation of past development activities was seen as a key reason why anticipated results had not materialized, and zeal for overturning the norms of established development theory grew throughout the 1980s and 1990s (Guijt and Kaul Shah 1998; Agarwal and Gibson 1999, Reed 2008). Marking this moment, in Robert Chamber’s 1997 influential book *Whose Reality Counts?: Putting the First Last* he writes,

“The visions of the 1950s and 1960s for a better world with full employment, decent incomes, universal primary education, health for all, safe water supplies, a demographic

transition to stable populations and fair terms of trade between rich and poor countries, have in no case been realized. The beliefs of those times – in linear and convergent development through stages of growth, in industrialization as the key to development, in the feasibility of a continuous improvement in levels of living for all – these now have been exposed as misconceived and, with the easy wisdom of hindsight, naïve...” (1).

Chambers’ book, a follow-up to his 1983 publication, subtitled *Putting the Last First*, advocates for a methodology that allows the target population to advance their own livelihoods through a means they deem appropriate. In this process, the voices of all, including those traditionally marginalized, should be heard. His text is directed at practitioners and is action oriented, stating, “This starts with ‘us, with development professionals’ who have the ability to amend “errors, omissions, delusions” (Chambers 1997, 2).

Signaled by Chambers, participatory development arose from a deep sense of frustration or as Sarah White (1996) writes “a protest against the existing orthodoxy,” but within a relatively brief period of time, it has succeeded in creating its own orthodoxy (Mehta et al. 2001; Agarwal 2001; Cornwall 2003). In the late 1990s, the development community experienced a transition from what Irene Guijt and Meera Kaul Shah call a “Participation Boom” to a “Participation Imperative” as the term came to represent “good” or “sustainable” development (1998), closely associated with the language of democracy building (White 1996). The movement of participatory development from a radical intervention in development theory to a “best practice,” is illustrated through the adoption of these ideas by increasingly powerful neoliberal institutions. This acceptance is demonstrated in the 1996 World Bank Participation Sourcebook. Reliance on the “external expert stance,” as the institution readily admits, has been (and some would argue still is) at the heart of World Bank development programs, yet in the 1996 publication they note their transition to new “participatory stance,” in which “stakeholders influence and share control over development initiatives and the decisions and resources which affect them” (4). With this

turn in practice, or at the very least rhetoric, among Bretton Woods institutions, developing nations were obliged to adopt participatory models as the World Bank increasingly mandated that participatory practices be incorporated into development programs before aid would be extended (Williams 2004; Goldin 2013). Carried out under the banner of flexible, responsive approaches driven by local populations, participatory development has become a paradox in the eyes of many academics and activists who argue that these interventions are still subject to control by development “experts” (Nelson and Wright 1995).

2.1.2 Decentralization

The groundswell of criticism against mainstream development theory in the 1970s and fervor for participatory methods had significant implications for how effective natural resource management was understood by academics as well as non-governmental and governmental agencies. Conventional theories of resource governance held that management practices should be dictated and carried out by the state (Kapoor 2001; Bruns 2007). This understanding was grounded in a belief that the interests of local communities were inherently in conflict with the conservation of resources and that their activities were exploitative, promoted the degradation of the natural environment, and impeded “rational” resource development (Chambers 1997; Kapoor 2001; Agarwal and Gibson 1999). However, by the 1970s, frustration with the inability of state-centric, expert-led approaches to radically improve the management of resources prompted a re-examination of the interaction between local communities and their environment (Agrawal and Gibson 1999). Fekret Berkes and colleagues (1989, 92) note this changing mindset, stating that research from the 1960s onwards challenged hegemonic ideals in resource governance to demonstrate that “users have the potential and, under some conditions, the motives and means to

act collectively” and self-regulate their resource use. Scholarship on common property management, which found that communities have special knowledge of local resources that allowed for successful management, reinforced calls by indigenous populations to recognize the value of local resource governance, forming a coalition of actors that advocated for the transfer of control over natural resources to communities (Chambers, 1997; Guijt and Kaul Shah 1998; Agrawal and Gibson 1999; Agrawal 2001, Cooke and Kothari 2001; Mustafa et al. 2016).

Increasingly the target of activists’ ire, the World Bank, among other multi-lateral and bi-lateral development organizations, began to shift their public approach to resource governance in the 1980s, again attempting to distance themselves from their ‘expert stance’ and demonstrate support for local capacity building. Their support often took the form of promoting the reorganization of resource management responsibilities, such that state control was decentralized, and local actors took on a greater role in service delivery (Mohan and Stokke 2000). Enthusiasm for these activities was on full display in the last several decades of the twentieth century as redistributing natural resource management activities from the state to local communities and the private sector became a key aspect of World Bank and International Monetary Fund structural adjustment policies (Nelson and Wright 1995). Such an approach to natural resource governance was argued to be more cost efficient, (Cleaver 1999; Mohan and Stokke 2000), as “clients became involved in the production of their own services” (Nelson and Wright 1995, 3). This rationale signals that while the increased local control of natural resources was intended to overturn established hegemonies in the field of international development, it did little to disrupt the neoliberal narratives that placed faith in the power of market-based incentives and privatized control to bring about effective governance (Nelson and Agrawal 2008). Indeed, rising in popularity along a similar timeline, Leila Harris (2009, 391), citing James McCarthy,

explains that community-based resource management acts as a complement to the growth of neoliberalism, serving “to uphold some of neoliberalism’s discursive and ideological foundations.” She explains, “for instance, community forestry and neoliberalism share the idea that states are unable to effectively manage forests and that the community is the only effective option for forestry management” (Harris 2009, 391). As such, in line with concerns regarding the conditions under which participatory development takes place, decentralization has been critiqued by scholars as a rhetorical façade for business-as-usual intervention, where central control for project design and implementation remains with the external actors (Nelson and Wright 1995). Nevertheless, Ruth Meinzen-Dick and Margreet Zwarteveen (1998) argue that the practice of devolving state control to communities is now common across thematic areas of intervention.

In the water sector, management over the last century was dominated by technical and administrative fixes centered on the construction of large-scale water infrastructure. Termed the “hydraulic mission” (J.A. Allen cited in Sultana 2013), popular opinion began to turn against this approach in the 1980s. Recognized as having negatively impacted surrounding ecosystems and resulted in decreased water quality or quantity for local communities, state driven interventions were critiqued for undermining poverty alleviation efforts (Ahluwalia 1997; Kapoor 2001; Bruns 2007; Sultana 2009). In response, development actors increasingly sought to decentralize water management, primarily through the creation of community-based water management organizations in rural, and particularly agrarian, communities (Ahluwalia 1997; Agrawal and Gibson 1999; Cleaver 1999, 599). Intended to increase water access for users, community-based water management organizations were constructed with the belief that local knowledge and the existence of communal understanding, trust could be leveraged to create institutions that were

responsive to users' needs, able to successfully implement agreed upon actions and resolve conflict as well as sustain resource management practices over the long term (Bruns 2007; Budds and Sultana 2013). The use of participatory approaches to were seen as particularly relevant to the water sector in part due to the nature of water itself. Karen Bakker (2007, 441) writes that “water is a flow resource whose use and health are most deeply impacted at the community level, protection of ecological and public health will only occur if communities are mobilized and enabled to govern their own resources.”

The perceived importance of local involvement in the water sector was formalized in the Dublin Statement on Water and Sustainable Development in 1992. Two portions of the agreement were of particular importance: (1) Principle Two, which states that “water management should be based on a participatory approach” and requires that “decisions are taken at the lowest appropriate level, with full public consultation and involvement of users in the planning and implementation of water projects;” and (2) Principle Three, which recognized the important role women play in water management and called for them to be empowered “to participate at all levels of resources programmes” (Dublin Statement On Water and Sustainable Development 1992). As community-based water management projects came to be seen as a practice in ‘sustainable development,’ the appeal of the approach increased among NGOs, government actors, and donor parties (Sultana 2009). Jacqueline Goldin argues that the concept of ‘participation’ has now become “hegemonic” in the field of water management, and “is difficult if not impossible to contest” (Goldin 2013, 179).

2.1.3 Identification

In 1976, widespread enthusiasm for participatory, decentralized natural resource management was put into practice in the Philippines as the Ford Foundation worked with the National Irrigation Authority to incorporate users into governance structures (Meinzen-Dick and Reidinger 1995). Expanded nationwide over the next four years, the project facilitated the transfer of small-scale irrigation canal operation and maintenance from government authorities to farmer associations, resulting in increased water access, equity of water supply, crop yields, and income for agrarian households according to follow-up studies (The World Bank 1996). Considered “the first and best documented nationwide program to build participation as a cornerstone of irrigation policy” (The World Bank 1996, 222), the reported success of this approach in the Philippines was echoed by studies of similar state-to-farmer irrigation management transfers in Indonesia, Nepal, Sri Lanka (Meinzen-Dick 2007), and Mexico (The World Bank 1996) that took place throughout the last few decades of the twentieth century.⁸ While project details and organization nomenclatures differed across these cases, they established belief in the creation of water users’ associations (WUAs) as a “participatory” replicable method by which poorly performing, centralized irrigation management systems could be reformed to strengthen rural livelihoods.

⁸ WUAs were present in the United States well before the 1970s, though surprisingly the history of these institutions and to what degree they influenced the design of WUAs abroad, particularly those supported by U.S. donors, was not discussed in any of the reviewed literature. Ashok Subramanian, N. Vijay Jagannathan, and Ruth Meinzen-Dick (1997) note two primary models of WUAs – the Asian model and the American model. The Asian model is described as involving the “direct participation of all members” and be “multipurpose organizations” whereas the American model is explained to be more specialized with “less reliance on face-to-face interaction” and “focused on irrigation rather than on multiple activities (Subramanian, Jagannathan, and Meinzen-Dick 1997, 9). Future research should examine to what extent the ‘American model’ for WUAs was exported to developing countries through Western institutions like USAID and the World Bank and how this may account for the tendency of contemporary, externally imposed WUAs to promote a ‘single-use mandate’ and face challenges in responding to local needs.

In particular, WUAs were envisioned as a response to the failure of large canal projects to pay adequate attention to the flow of water to farmer's fields (Hunt 1989, 79). Robert Hunt (1989, 79) explains that in these projects "direct bureaucratic responsibility ends at the outlet to the distributary canal...Between the outlet and the farmer's field is a physical and social space for which neither the farmer nor the bureaucracy takes direct responsibility." According to Hunt, development agencies and policymakers sought to clarify management procedures for this in-between space by increasing farmer involvement and fostering a sense of collective responsibility through the creation of a formal water users' association (1989). Describing the guiding ethos behind WUAs, he writes "if the farmers would only participate...then the ditches would be constructed, the water would be allocated, and most important of all, the maintenance would be done. Then water allocation would be optimized, food production would be maximized, and the capital investment would be more efficient and effective" (1989, 79). Broadly, WUAs are defined as "cooperative associations of water users *established legally* [emphasis added] to govern decision-making processes towards a common goal related to sustainable water management for the benefit of all members," with a central aim of ensuring "the maintenance of infrastructure in order to provide an uninterrupted and dependable water supply to users" (Madigele 2017).

While local water management schemes have existed for centuries, WUAs differ from more traditional grassroots groups that are designed and sustained independently by users, in that they are by and large initiated by development organizations in collaboration with government authorities and incorporated into national legal frameworks. An example of this distinction is illustrated by Haiyan Yu in his 2016 article "Can Water Users' Associations improve water governance in China? A tale of two villages in Shiyang River basin." Yu (2016) writes that in

China water systems were traditionally managed by communities. But it was not until the 1990s that the concept of a ‘Water Users’ Association,’ based on models developed outside the country, was introduced to China through a project by the World Bank in the Zhanghe Irrigation District in Hubei Province (Yu 2016).

Beyond the inclusion of development actors, the state, and local users in project design and implementation and the establishment of legal backing for organizations, cost recovery became a central component of WUA projects. While the cost of irrigation was previously fully funded or subsidized by the state, with the introduction of WUAs, governments were encouraged to introduce or increase water user service fees – a move that aligned with neoliberal structural adjustment policies and advocacy for decreased national spending on public services. Collected by the WUA, these fees were expected increase the cost efficiency of irrigation, covering the costs of operating the WUA as well as maintenance and repair activities. Faith in this project component was bolstered by evidence from the Philippines which showed that as of 1993, the cost of maintenance had decreased by 60 percent and personnel costs dropped by 44 percent (The World Bank 1996). Similarly, after fiscal crisis had resulted in over a million hectares of irrigated land loosing access to water, small-scale irrigation management responsibilities were transferred from the state to WUAs in Mexico in the 1980s, increasing the recovery of operation and management costs from 18 percent to 78 percent (The World Bank 1996). In this way, projects to establish WUAs presented fiscally challenged governments, and the international lending institutions that backed them, with a route to cut the high-costs of centrally managed irrigation systems while, theoretically, expanding coverage.

Rhetoric supporting WUA formation has since moved beyond pragmatic accounts of fiscal crises and the need to fill gaps in the administrative structure of water management

systems to include grander goals of improving food and livelihood security and empowering local communities. For example, in Sri Lanka, WUA activities were argued to have positive “flow on” on effects for households’ income and food security (IWMI 2011). Indeed a 2011 report by IWMI reviewing WUAs created by the International Fund for Agricultural Development in Asia stated that strengthening food security was a fundamental goal of all projects completed. Similarly, the U.S. Government’s FtF initiative, has constructed WUAs in several target countries, arguing that they are central to the overall mission of reducing hunger and malnutrition (Feed the Future Blog 2013). Fostering local participation in water management decision-making and activities, and thus granting community members the ability to enact meaningful change in their lives, is also seen as a form of empowerment (Cleaver 1999). Frances Cleaver notes (1999, 598) that in particular, women’s engagement in local water user management activities and inclusion in institutions was presented as a form of “female emancipation.” Often referenced in connection with local “empowerment,” “democratic decision making” has become an oft-used phrase to describe WUA projects (Yu 2016). Project designs frequently include plans for the election of group leaders, sub-committees to work on special issues, and meetings where all members have an equal opportunity to participate, with the vision that direct experience with democratic procedures will inspire civic engagement at a larger scale (IWMI 2011).

Viewed in this light, while WUAs originate from radical intentions to disrupt hegemonic modes of natural resource governance, they now serve to support the “neoliberalization of water governance” (Harris 2009, 388). A practice through which the ideals of neoliberalism are put into place (Bakker 2015), Harris (2009, 388) describes the neoliberalization of water governance as signaled by “[1]the devolution of water management (e.g. from centralized to more local

management), [2] democratization (attempts to more fully engage communities in participatory resource management), [3] commodification (attempts to use market instruments and pricing more fully in water provision), and [4] privatization of water resources (engagement of the private sector in water infrastructure development and service provision)” – processes which, as seen in the above discussion, are at work through the creation of WUAs by international development organizations. Harris highlights that these processes are taking place unevenly and calls for sustained attention to the different spaces and scales where a neoliberalization of water governance is taking place as a part of understanding its effects (2009). It is with this in mind that this chapter turns to Tajikistan, examining the conditions under which WUAs were introduced by development agencies, as a necessary precursor to evaluating the impact of these institutions across “beneficiary” populations and across agricultural plots.

2.2 WUAs in response to the collapse of Soviet service provision

In 1924 the territory of what is today Tajikistan was incorporated into the Union of Soviet Socialist Republics (USSR) and for the next nine decades, resource governance within its borders occurred according to the logic of the central Soviet government. During this time, the guiding logic and structure of resources governance was left relatively unaffected by global shifts in development theory. But, following the dissolution of the USSR this changed. On September 9, 1991, Tajikistan became independent and the forces directing the management of natural resources began to shift, as bi-lateral and multi-lateral agencies entered the country bringing with them affirmations that a better future may be secured through participatory development and decentralized resource control.

Relatively unknown to the outside world, Tajikistan gained international attention with the outbreak of civil war in May 1992. After the country's independence from the Soviet Union, elections were held, and a new government headed by a former Communist Party leader stepped into office. However, tensions surrounding the legitimacy of the election led to protests, which quickly devolved into a violent conflict between multiple factions, each of whom claimed divergent regional affiliations, political and religious allegiances, and aspirations for the construction of a new, independent identity for Tajikistan. These different militias can be loosely grouped into pro-government and opposition forces. The base of pro-government forces was drawn from Soviet period political elite that hailed from the area surrounding Leninabad (today the city of Khujand) and the southern city of Kulob. This group coalesced behind Emomali Rakhmon⁹ at the close of the war in 1997 after which he was installed as president, a position he has held to this day. Referred to as the United Tajik Opposition, anti-government forces were largely composed of the supporters of the Islamic Renaissance Party, Democratic party of Tajikistan, and La'li Badakhshan, which was based in the Pamir Mountains. By the war's official end in 1997, between 40,000 and 100,000 people had lost their lives and more than one million were displaced (Epkehans 2016), leaving the country, which was still reeling from the abrupt collapse of the Soviet Union, with deep socio-economic challenges.

During the civil war, irrigated crop cultivation experienced significant disruption, an experience that continued with the initiation of national land reform. Motivated by the global popularity of decentralized, participatory natural resource management, international development agencies began introducing WUAs soon after the war's end as a part of reconstruction efforts. The following subsection explores this period of recent history, tracing the

⁹ At time, his name was written Emomali Rahmonov, but he has since dropped the 'ov' ending.

shifting dynamics of irrigated agriculture and water management in the run up to and after Tajikistan’s independence. Focusing on the experiences of men and women cultivating irrigated plots and feeding their families in Nosiri Khusrav, this section is intended to ground the introduction of WUAs spatially and temporally, identifying the challenges they should ameliorate. The extent to which WUAs, in their current conception and operation respond to these challenges in a way that benefits all irrigation water users will be discussed in Chapter Three.

2.2.1 Irrigation until Independence (1924-1990)

Forming a part of the Soviet Union’s southern border with Afghanistan, the Tajik Soviet Socialist Republic (TSSR) saw little industrialization and was organized to create “a raw material producing periphery” (Spoor 2000, 59), centered around cotton cultivation. Cotton was grown in the area prior to incorporation into the USSR, but at a scale dwarfed by the scope of subsequent Soviet cultivation. Vast tracts of land were dedicated to this crop, particularly in Khatlon Province, which has a warmer climate than other areas of the country. In Nosiri Khusrav, I asked the WUA contract manager what the landscape looked like prior to independence. “There were no factories here. In the Soviet Union, how can I say....” He gestured out the window at fields of wheat lined by tiny trees far in the distance, “until those apricot trees over there was cotton. Everything was cotton.”

While cotton held an elevated position in the TSSR, its blossoming branches forming one-side of the national emblem, significant fruit and vegetable production also occurred in rural communities during the Soviet



Photo 4: Left to Right, emblem of the Tajik Soviet Socialist Republic, Emblem of the Republic of Tajikistan.

period. Considered the historical origin of modern varieties of onion, garlic, melon, apple, and carrots, the region has a rich history of produce cultivation and by 1980 Central Asia was estimated to provide 35 percent of all fruits and vegetables in the USSR (Craumer 1992).

To expand cultivated territory in Central Asia, the USSR embarked on its own hydraulic mission in the 1920s, investing heavily in the construction of canals and pump stations. This effort was aided by irrigation engineers and agricultural specialists from the United States, who traveled to the Soviet Union to provide technical expertise (2016). In line with the dominant understanding of natural resource management at the time, American advisor Lyman Wilbur, alongside his Russian counterparts, saw the existing irrigation system as “tortuous” and the people as unable to “properly care for their land” (Peterson 2016, 460). Assisting in the design and construction of straight, modern canals, Maya Peterson (2016, 444) argues that “by enabling transformative projects that dictated particular uses of local environments at the expense of others, however, and through promoting development schemes that further established Central Asians’ dependence on the cultivation of cotton, these experts inadvertently helped to ensure the perpetuation of unequal colonial relationships. While Peterson’s statement is borne out of the activities of American specialists in the 1930s, development activities in by American government agencies in the 2000s may be subject to the same critique – an argument that will be expanded in Chapter Three and Four.

After the construction of water delivery infrastructure in Soviet Central Asia, the maintenance and operation of irrigation systems, and management of irrigation water more generally, was highly centralized, aligning closely with what Ilan Kapoor (2001) describes as mainstream environmental management prior to the rise of participatory development. He writes,

“Nature, in this view of things, is separated from human experience so that human beings are able to exploit it without limit and consequence. It is seen as inert and passive:

humans can ‘manage’ it, use it as a ‘resource’ or degrade it without fearing the after-effects...In the hands of governments and bureaucracies, whose role by and large is and has been to regulate the natural environment, rationalism has evolved a top-down managerial approach. In principle, this means that decisions taken at the top are implemented by the lower ranks through the most ‘efficient’ means possible” (Kapoor 2001, 270).

Within the TSSR, central control lay with the Ministry of Irrigation and Water Management whose policies were executed through administrative branches at the provincial level (Sehring 2006). Provincial officials in turn, worked with district irrigation offices to operate and maintain primary and secondary canals (Sehring 2006). Flowing through secondary canals, water was then diverted to large collectivized farms, classified as *sovkhos* (state-run) or *kolkhos* (collectively-run), where irrigation was managed by an “irrigation professional” who answered to the farm leader (Hornikova and Abdullaev 2003). Labor on Soviet collective farms was specialized and individuals outside the aforementioned actors had very little involvement in water system management or crop irrigation.

As water flowed to *sovkhos* and *kolkhos* farms, it was also diverted by irrigation specialists to village communities, traveling through *juibors* and used by households for washing and irrigating kitchen gardens. The growth of food crops in gardens was common in Central Asia before to the advent of the Soviet Union, and during collectivization, the then General Secretary of the Communist Party, Joseph Stalin made a formal decree preserving these plots’ status as individual property (subject, of course, to the amendment in size if deemed necessary) (Rowe 2009). Ubiquitous among the households in Nosiri Khusrav during the Soviet period, reliance on these plots for food varied. One man from the village of Ayni said that nearly 50 percent of his family’s daily food was sourced from their garden; while residents in other villages explained that they grew only a few products and devoted most of the cropping area to animal fodder. The chairman of WUA 2 explained that in his family they didn’t grow anything on their plot during

the Soviet period, as their salaries, in addition to allowances provided by the government for each child, were sufficient to purchase any needed goods. An understanding of kitchen garden cultivation as an optional occupation, rather than a necessity, was common among interviewees, many of whom noted that the prices for food products were low and the shelves were stocked.

The importance of kitchen garden produce increased during the latter half of the Soviet period, as agricultural wages in Central Asia fell rapidly from 70 percent above the USSR average in 1958 to below the average by the end of the 1980s (Patnaik 1995). Standards of living declined in the wake of decreasing income and it is estimated that by 1990 between one third and one half of the population in Central Asia was living under the poverty line, as compared to just five percent of residents of Russia (Patnaik 1995). The per capita consumption of animal products followed a similar trend, with the intake of dairy, meat, and eggs all significantly lower in Central Asia than the rest of the Soviet Union (Patnaik 1995).

2.2.2 Agriculture in the aftermath (1991-2017)

Food insecurity and malnutrition were aggravated by independence, as disruptions in input supply chains, abrupt halts in subsidies, and shifts in management threw the agricultural sector into turmoil. Cuts in government funding for agriculture were widespread and negatively affected funding for water management (Abdullaev and Rakhmatullaev 2015). Jenniver Sehring (2006) writes that the amount of money allocated for irrigation maintenance and operation dropped dramatically from USD 72 million in 1991 to just USD 6.5 million in 2002. A lack of funding hampered effective upkeep and between 1992 and 2002, it was estimated that just five to six percent of all needed investments in infrastructure repair and maintenance were made (Bayarsaihan and Mckinney 2012). As the upkeep of water systems declined, the country saw a

45 percent drop in agricultural output from 1990-1995 (Lerman et al. 2003). In Nosiri Khusrav, insufficient maintenance has left drainage canals filled with weeds, mud and stagnant water. The inability of water to freely flow through these canals has raised the salinity level of the surrounding area, complicating cultivation. In Muminobod village, Shuhrat's kitchen garden looks as though someone took a paintbrush full of whitewash and flung it over his fields. With great white patches of earth in between his small pepper plants, he explains that he moved his family to this region because of the availability of arable land, but since coming, they have been unable to successfully grow vegetables.

Challenges in local production were compounded by the outbreak of civil war, which caused mass economic, social, and political upheaval, disrupting trade and crop cultivation. Violent conflict was concentrated in the southern half of the country, the nation's most productive agricultural region, and resulted in the widespread loss of agricultural equipment and damage to irrigation infrastructure. While there was no fighting in Nosiri Khusrav, neighboring districts were affected, including Shaartuz which completely envelops the district of Nosiri Khusrav. Social and political upheaval during the war in Nosiri Khusrav left infrastructure neglected and canals filled with mud. Residents explain that the equipment needed to repair infrastructure systems, including excavators and pumps, disappeared after the war. Previously held by the collective farm, excavators were privatized by individuals who used them for their own fields or sold them off. The *raisi mahalla*



Photo 5: Top to bottom, clogged drainage canal and a recently irrigated plot coated in salt that has risen to the surface of the soil in Khatlon Province, Tajikistan. Photo by author.

of the village of Zafar stated that water was brought to his village with the help of a large pump built during the Soviet period. “But,” he says “after the war people stole pieces from it, all of it was ripped apart.” Many residents of Nosiri Khusrav marked the war as a turning point in their water access, with shortages increasing throughout the 1990s and into the 2000s. With sufficient water access, kitchen gardens may be cultivated up to three times a



Photograph 6: Pump system drawing water from a tertiary canal to pipes that empty into intra-village watercourses in Khatlon Province, Tajikistan. The pump is operated and maintained by a local resident who took the job when no one else in the village felt qualified. Having studied physics in grade school made the transition easier, he explained, but otherwise he has learned everything related to the pump system on his own. Despite his care, leaks have sprung all along the pipes leading from the pump station into the village. A lack of funds has led to improvised solutions like red piece of metal pictured, which is successfully blocking a leak. Photos by author.

year in Khatlon Province, but because of a lack of water many households are only able to crop once. The *raisi mahalla* of Zafar explained, “here my dear, we cultivate things with a lot of hope and prayer.”

With farmers and households struggling to cultivate food on their plots, the post-independence period was marked by decreasing food consumption per capita (Rowe 2009). The World Food Program reported that 88 percent of the population adopted dietary practices that involved less diversity in foods and fewer overall calories in 2000 (Rowe 2009). The consumption of basic foods, including meat, cooking oil, milk, and potatoes, fell dramatically,

with only wheat consumption increasing as bread replaced more expensive foodstuffs (Rowe 2009). While they have fluctuated over the last several decades, the high price of goods in stores and local markets remains a challenge for many rural households. A man from the village of Ayni lamented that

“Before when we worked on the kolkhoz, we got a salary and it would sustain us from month to month. At that time one person could provide for a family of ten, but now ten people cannot even provide for one person.”

His statement is both testament to rising prices and poor employment opportunities.

Economic recovery from independence and the civil war has been slow and Tajikistan has struggled with high rates of unemployment. In response to limited job prospects, many residents have sought better wages abroad. In 2017, there were an estimated 640,000 Tajik migrants in Russia, the destination for 98 percent of those leaving Tajikistan for work (Levina 2017). While still a sizable portion of the 8.7 million citizens of the country, the number of migrants in 2017 is almost half what it was in 2012, at 1.2 million—a decline prompted by visa crackdowns and Russia’s ongoing economic recession (Levina 2017).¹⁰ Labor migration is particularly common in rural districts like Nosiri Khusrav, where there are fewer job opportunities. A 2016 study by IWMI found that out of nearly 1,920 households in Khatlon Province, 47 percent had at least one family member leave Tajikistan for work in 2016 (Buisson et al. 2016, 40). As may be expected from the migration rate, the wellbeing of rural communities, and indeed the country as a whole, is closely tied to remittances. A department head at the Economic Research Institute of the Tajik Economics and Trade Ministry stated that “these migrants are the reason why there is no mass hunger in the country” (Hierman 2016, 239)

¹⁰ The exact number of labor migrants from Tajikistan varies widely across reports. This number was selected as it was reportedly taken from a report by Saodat Olimova, Director of the Shark Research Center of Tajikistan, who has conducted extensive research on out-migration from Tajikistan for over a decade.

Inadequate and inconsistent income has brought a rising dependence on kitchen gardens as a source of food and potential profit in agrarian communities. In the interviews I conducted throughout Nosiri Khusrav, men and women stressed that their kitchen garden is now more important to their food security than in the past, a trend they do not feel is likely to abate. Without hesitation Abdullah, an extension officer for the TAWA project notes that kitchen gardens have helped households cope with rising food prices. He explains that during the Soviet Union the government managed food prices to keep them affordable, so with one ruble a family could buy six to seven kilograms of potatoes, but now with five TJS you can barely get one kilo, meaning most families must grow this crop to satisfy their needs.

Kitchen gardens currently act as important buffers against malnutrition, yet their potential to continue in this role is threatened by the state of post-independence water delivery. This is highlighted by Bibigul, an elderly woman from the village of Sebiston who has just under a hectare of kitchen garden land. We spoke sitting under a tree in her yard, Bibigul dressed in what looked to be a party dress, cut in a style popular during the Soviet period. In 2016, one of her sons went to Russia for work, but he was unable to find steady employment that provided enough income for him to live on and send home. Fearing deportation or harassment, he left Russia and returned to Tajikistan. She explained,

“Now it is really difficult for our family. If there were any benefit from the land, I would say that [this could support us], but there is no water [that flows to our house]. I try to irrigate using a pump [in my yard], but it does not have much power, so it doesn’t work well. Instead, I fill a large bucket with water and pour it into this apparatus,” she said, pointing to a small backpack pesticide sprayer. “I spray the water by hand. People who work the land, their hearts burn when their plants do not receive water. What else can I do? I have to act to make sure the crops do not dry up.”



Photograph 7: Bibigul and her apparatus in Khatlon Province, Tajikistan. Photo by author.

Walking over to her plot, she steps over unripe tomatoes that have dropped off shriveled vines.

“Look here, everything has dried up. I could only salvage a little harvest... When there is no food a person feels the weight of her family on her shoulders. If we had everything, I would not have grown old so fast. Look how old I have become because of the shortages we face. I am always thinking, how will we make food? We don't have potatoes, we don't have tomatoes.”

Gesturing at her daughter-in-law holding a small baby in the doorway of her house, her voice chokes up,

“Look my grandson is crying, he has no clothes. Clothes, eh... If there was water I would sell [these crops] and we would have new clothes! He doesn't have any clothes. My clothes and worn are threadbare. I am ashamed to wear them anymore. Just now I put this on when you came through the gate. If you don't believe me, I will show you.”

The national government has sought to address food insecurity and promote self-sufficiency by strengthening local agricultural production (President of the Republic of Tajikistan; Muminjanov et al. 2008), particularly for vegetables (Boboev 2006). Rather than focus on crop cultivation for export, Tajikistan's President Emomali Rahmon, has reportedly voiced that, “the main task of agrarians is to provide food security for the country. ‘To achieve this goal we should we use all existing resources and provide sustainable development of the agrarian sector’” (Hasanova 2008). The first step in this process was land reform.

In 1992, the law “On Land Reform” was introduced to break-up the large collective and state farms into smaller individual farms (Sehring 2006). Interrupted by the civil war, this process did not begin in earnest until 1997. Over the course of the next seven years, 354 *kolkhoz* farms and 348 *sovkhov* farms were closed and land was redistributed, creating over 10,000 *dehqon* farms, a little under half of which are located in Khatlon (Hasanzoda 2015). *Dehqon* farms have opened up new economic opportunities for households in rural areas, but as stated in the introduction, they are held by a minority of rural households. In a 2016 survey IWMI found

that just 14 percent of households possessed¹¹ a *dehqon* farm plot, yet 99 percent had a kitchen garden (Buisson et al. 2016). If a household does not possess a *dehqon* farm they may still work on a neighboring farm as a laborer, but this does not provide a significant source of income, as cash wages are rarely provided. Agricultural laborers more commonly work fields in exchange for the right to collect *guzapoya*, cotton stalks, at the end of the harvest season, or in some cases, in-kind earnings, such as cotton-seed oil or onions. As the monetary benefits of *dehqon* farm cultivation are concentrated among a limited number of individuals, the role of these plots in supporting local health and nutrition is similarly restricted.

The majority of farmland in Khatlon is still dedicated to the cultivation of cotton. But with the emergence of *dehqon* farms, the diversity of crops grown in this region has increased. Farmers now cultivate different grains, livestock fodder, vegetables, melons, and fruit trees—each of which has specific water needs (Abdullaev et al. 2010). Scholars note that the creation of thousands of new farm plots over a relatively brief period of time has caused profound challenges for water delivery, as the division of administrative duties and irrigation infrastructure did not undergo fundamental reconfiguration (Sehring 2006; Abdullaev et al. 2010; Abdullaev and Rakmatullaev 2015). Sehring (2006, 8) writes,

“While before the *kolkhozes* and *sovkhozes* were responsible for water distribution on their huge areas and the maintenance of the on-farm canals, now the newly emerged small farms had to be supplied individually with water. As nobody felt responsible for the operation and maintenance (O&M) of the on-farm channels and due to the lack of financial means, investments in water infrastructure almost stopped, irrigation systems deteriorated and water use was not controlled anymore.”

¹¹ The word “possessed” is used here rather than “owned” as the government retains ownership of all land in the country. Land is provided to residents on the basis of long-term, inheritable leases. This system of land tenure also complicates the idea that collective farm land was “privatized,” nevertheless, this is the terminology most frequently used by academics and development practitioners.

Similarly, Vilma Horinkova and Iskandar Abdullaev (2003) write that across Central Asia, the breakup of large farms left an “institutional vacuum” and ambiguity about who was responsible for the operation and maintenance of canals flowing to the new farms.

In the absence of change within formal structures, Abdullaev and colleagues (2010) note that rural residents were ill-equipped to resolve challenges. They explain that because irrigation knowledge and expertise was concentrated within a few agencies and locally, within just a few people, during the Soviet period, when decollectivization occurred “former members of the collective farms as well as citizens with no agricultural experience became individual farmers. The absence of both, experience and incentive systems for collective action for on-farm level water management initially resulted in chaos and distortion” (Abdullaev et al. 2010, 1030). Put in less nuanced language, the World Bank’s performance report of their first agriculture and irrigation reform project following the civil war, states that “Since farmers were used to having decisions made for them within the state for more than 60 years, they were not natural entrepreneurs” (Sector Evaluation Division, Independent Evaluation Group, World Bank 2008, 5).

Residents of Nosiri Khusrav would likely take issue with this last statement. Throughout the district, residents explained that when no help came from the *vodkhoz*, they mobilized as a community to maintain infrastructure. The head of WUA 1 explained with a sense of pride that after independence “there was no regulation for *dehqon* farms, no management of the water, and no water gates. In that time the water just never flowed, there was nothing. The trees all died— I witnessed this myself.



Photograph 8: An old car door that is used as a make-shift water gate in Khatlon Province, Tajikistan after the gate installed in the Soviet period went missing. Photo by author.

We suffered [because] they [the *vodkhoz*] didn't clean the drainage canals. I went out myself and built two water gates." Residents of Faizobod echoed her frustration with the *vodkhoz*. In 2014, they explained that four *latoks* broke but the *vodkhoz* took no action to fix them. Instead, villagers came together, bringing whatever amount of money they could spare to pay for the repairs. Since the repair of these *latoks*, they have worked collectively to maintain the structures and pool their money to pay a local boy to walk the lengths of the *latoks* each day to ensure everything is in proper working order. In all nine villages that I visited, households noted that under the direction of the *raisi mahalla* they regularly gather together to clean the watercourses that bring water from tertiary canals into their kitchen gardens. Lacking support from the *vodkhoz* to rent an excavator, they have at times even worked to clean larger canals either by using a small farm tractor or in extreme cases, by hand. While villagers are attentive to the irrigation needs of kitchen gardens, recognizing the crucial role they play in providing sustenance for their community, the extent to which the WUAs, as water management institutions designed to serve their territory, are structured to support their efforts to provide water on these plots is under question. Framing the introduction of WUAs in Tajikistan as a product of the sweeping popularity of participatory development and decentralized natural resource control, the following subsection lays the necessary foundation for an evaluation of these institutions in the context of broader critiques of these development practices with particular regard to inclusion.

2.2.3 WUAs as an intervention in 'chaos' (1999-2017)

In 1999, the World Bank authorized a loan of USD 6.5 million to rehabilitate irrigation infrastructure and create nine WUAs in Tajikistan, the first such associations to be organized in

the country (Oblitas 2006). Other international development agencies followed suite, and since this time, WUAs have been established with the financial and administrative support of the Swiss Development Corporation, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the Asian Development Bank, Helvetas International, United Nations Development Programme (in cooperation with the IWMI) and USAID. As a result, in less than two decades, over 400 WUAs have been created in Tajikistan, 135 of which are in Khatlon, as of November 2017.

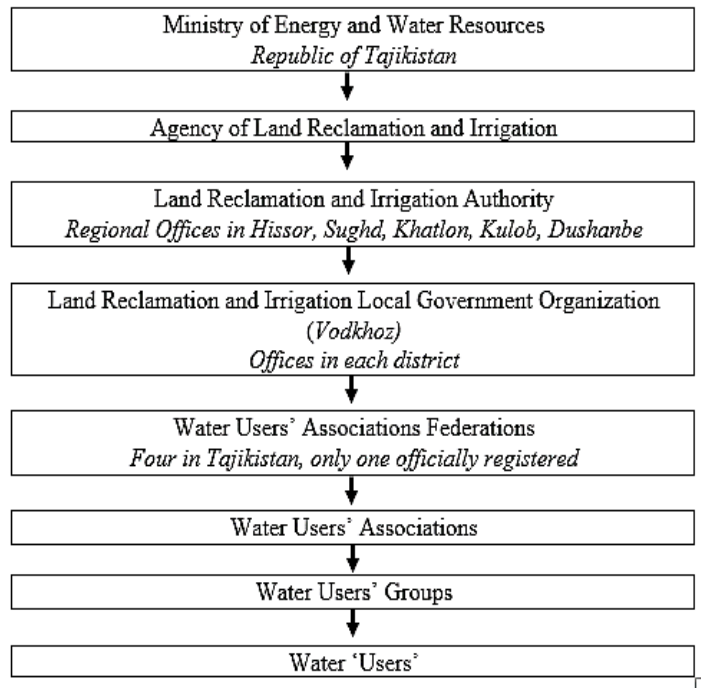
In line with the impetus for community-based water management creation globally, WUAs in Tajikistan were introduced in response to the inability of the centralized water management system to adequately respond to user needs. In particular, development actors envisioned these associations as a means to 1) fill a recognized administrative gap in irrigation management, 2) improve the cost efficiency of the irrigation sector, and 3) facilitate more responsive water management by leveraging local knowledge and community participation.

Administrative Fix

As referenced above, land reform posed a significant challenge to water delivery, in large part because water governance structures did not undergo concurrent reform. Changing little from the Soviet system, decision making occurred hierarchically after independence, with policy directives passed down from the central ministry to regional and then district level government offices, who were also responsible for the management of primary and secondary canal systems. As discussed earlier, during the Soviet period, water would at this point be brought from the secondary canals to *kolkhoz* and *sovkhos* farms by an irrigation specialist employed by the farm leader. But with the breakup of these collective farms during land reform, this position was

eliminated. This has left tertiary canals, which now bring water to *dehqon* and kitchen garden plots, without a clear water service provider. Abdullaev and colleagues (2010) explain that WUAs were put in place to fill this administrative void. Composed of groups of ‘water users’ who hold joint responsibility for infrastructure maintenance and operation, WUAs were intended to ensure that water

Figure 6: Irrigation water management structure in the Republic of Tajikistan (2017). Created by author.



flowing through tertiary and occasionally secondary canals arrived to plots in a timely manner, in an adequate quality, and with equitable distribution. Translating to increased water access, and theoretically, more robust harvests, the formation of WUAs was presented as an intervention into Tajikistan’s persistent challenges with hunger and malnutrition. USAID has completed the majority of their WUA creation and support projects under the FtF initiative, which has an explicit objective of reducing rural food insecurity.

Under the World Bank, WUAs were organized along administrative boundaries, often aligning with *jamoats* units. This practice has changed over the last decade as USAID has advocated for and created WUAs with hydrological boundaries. The government now plans to shift WUAs with administrative boundaries to the hydrological model over the next ten years.

Cost Efficiency

Under the Soviet Union payment for irrigation water was resolved by collective farm leadership in cooperation with state authorities, meaning costs were not borne (directly) by rural households. But with the dissolution of collective farms and the creation of *dehqon* farms, payment practices required change. In 1996, a tariff on water supply was introduced, yet this failed to alleviate budget shortfalls (Bayarsaihan and McKinney 2004). A USAID report noted that between 2001 and 2005 the cost of water for users increased threefold; however, they state the rate is still too low to fully fund the operation and maintenance of irrigation systems with user fees—a commitment Tajikistan made to the World Bank (USAID 2016). Despite the relatively low rate, irrigation authorities still faced difficulty collecting the fees from users, aggravating financial woes. WUAs have been advocated for by proponents globally as cost efficient local partners who can facilitate the collection of water fees, thereby improving cost recovery (Yu 2016). This rationale was drawn upon in justifying the creation of WUAs in Tajikistan.

In the “Project Appraisal Document on a Proposed Credit in the Amount of SDR 14.8 Million (US \$20 Million Equivalent) to The Republic of Tajikistan for Farm Privatizing Project May 19, 1999,” the first text to propose the creation of WUAs in Tajikistan, the World Bank writes,

“Timely and adequate provision of water, institutional mechanisms for setting, collection and use of water charges and transfer of responsibility of operation and maintenance to the “water users” are measures essential for sustainable increase in crop productivity. The Government [of Tajikistan] is in the process of reforming the irrigation sector, has passed the Water Code¹², is preparing the procedures for the formation of water users’

¹² While extremely vague in other regards, the 2000 Water Code of the Republic of Tajikistan, which legalized WUAs, explicitly defines the ability of associations to collect fees for water delivery services in article 43 (Sehring 2006).

associations (WUAs) and is taking initiatives to gradually increase the water charges to recover operation and maintenance (O&M) costs, based on water users' ability and willingness to pay...The Ministry of Irrigation field offices do not have the necessary funds, equipment and staff to properly maintain the facilities. However, the utterly bad situation of the pumping plants clearly indicates a long-term neglect of maintenance since the time they were built (1958-62). These observations raise the concern that the facilities may not be properly maintained subsequent to very expensive rehabilitation under the Project. The fundamental solution the project would be advocating to the Government is to let farmers organize into water users associations (WUAs) and manage their tertiary or farm level irrigation facilities" (Environmentally and Socially Sustainable Development Azerbaijan, Tajikistan, Uzbekistan and Aral Sea Country Unit 1999, 5,46)

This statement exemplifies in the way in which tenets of neoliberalism, namely the inability of the state to effectively manage service provision and strength of decentralized resource control and market interventions in bringing positive progress, were argued for within the context of participatory, community-based water management and introduced via WUAs in Tajikistan.

Participation and Coordination

In line with the ethos of development theory at the time, international actors active in Tajikistan after the civil war viewed WUAs as an opportunity to increase local engagement in the irrigation sector, with the intended effect of distributing information about 'best practices,' and "empowering" communities. In a document outlining their Farm Privatization Project in 1999, the World Bank described the initiative as using a "participatory approach" – a claim which was justified in part through their creation of WUAs. They write that "to strengthen the approach and to consistently involve the beneficiaries in the implementation of the project" the project will create "water user's associations and groups to ensure farmer's participation in decision making for water scheduling, distribution, cost recovery for operation and maintenance, etc." (Environmentally and Socially Sustainable Development Azerbaijan, Tajikistan, Uzbekistan and Aral Sea Country Unit 1999, 24). A more recent piece by DAI, the implementing

partner contracted by USAID during one of their WUA creation and support projects continues in the same vein, writing that WUAs have “fostered community participation” and “serve as the face of the community to district government officials regarding water management issues” (Campbell and Karchner 2015). Not only are users to be actively involved in water management, but through WUAs, the irrigation system will also be “sustainable” (Feed the Future 2014), “good governance” will be fostered (Feed the Future 2014), and “community development” will be supported, as “water users working together along irrigation canals build and share critical knowledge on water-borne diseases, food preservation, and children’s nutrition [and] the associations also provide opportunities for women’s participation and leadership” (Feed the Future 2013) – language which echoes the benefits associated with community based natural resource management globally.

Conclusion

During the 1990s, the population of Tajikistan experienced rapid change as the political structures, economic institutions, and physical landscapes upon which they had built their lives were upended through independence from the Soviet Union and civil war. Access to irrigation water in rural communities diminished due to deteriorating infrastructure and inadequate management procedures, challenging households’ ability to successfully cultivate crops. As water shortages have become more severe, rural dependence on their kitchen gardens as a primary source of food has simultaneously grown. Shifting in status from a plot of land where the cultivation of vegetables and fruits for family consumption was seen as discretionary during the Soviet period, to one where the cultivation of produce provides for the foundation of household health and wellbeing in the wake of higher food prices and rural unemployment—kitchen

gardens play a crucial role in preventing rural hunger and malnutrition. Crop cultivation on *dehqon* farms is also influential in improving rural conditions, but the direct benefits of these plots are more restricted, as they are held by a limited number of households and do not provide substantive employment opportunities. While their commercial crops may very well increase the quantity of products at local markets, the price of these fruits, vegetables, and grains are often prohibitive for households, hampering the impact of this activity on rural hunger and malnutrition. Post-war conditions mandate an intervention into water provision, but in order for this intervention to have significant impact on rural wellbeing, it must assure irrigation water not only for the newly created *dehqon* farm plots, but also for the time-tested kitchen gardens.

International development actors have stepped in this moment of disarray, bringing with them a faith in participatory approaches to natural resource governance as a means to resolve the administrative and fiscal challenges of the state. Advocating for increased user participation in irrigation management, development agencies have promoted WUAs, a particular model of community-based water management organization that entertained rising international popularity throughout the 1990s and into the 2000s. Initially tied into measures by the World Bank to divide and distribute collective farm land, the introduction of WUAs similarly divided the irrigation landscape among community organizations, distributing responsibilities for management to an ambiguous group of water users. It was assumed that with this transfer in responsibility for tertiary irrigation to communities, the delivery of water would be made more efficient and equitable, as the water access would be negotiated within the bounds of mutual understanding. But this is after all, an assumption. As development organizations like USAID introduce WUAs and rewrite the management of irrigation water in rural communities along the logic of neoliberalism, there has been very little follow-up to evaluate this assumption or how, in

practice, the design of these ‘participatory’ institutions may affect water access for different users. The next chapter of this thesis takes a first step into this exploring this question, examining to the power relations that are captured in WUA’s design and the way they play out in producing uneven resource control.

Chapter Three

Defining the water user:

Inaction and inattention to household incorporation into WUAs



Photograph 9: Kitchen garden being irrigated in Khatlon Province, Tajikistan. Photo by author.

Introduction

I met Firuz in the village of Tojikobod, within the territory of WUA 4 in Nosiri Khusrav. In his early thirties, Firuz is the head of his household of six, which includes his wife, children, mother, and younger brother. His family moved to this village from Sovietobod, just north of Qaboidyon, 25 years ago because of a lack of water, and until four years ago they were able to successfully grow onions and potatoes for sale as well as other vegetables for their own consumption on their 0.10-hectare kitchen garden. “But now,” he said “we can’t. We get water for three or four days in a row, then our access is cut for nine or ten days.” With summer temperature hovering around 110°F, none of his crops can survive long without water. Seeming to wilt himself as he looked at his dried-up garden, Firuz explained that before they only had to

go to the market for oil and rice, with the rest of their food needs satisfied by their small plot. But as their harvests have repeatedly failed, his younger brother has gone to Moscow, though he has been unable to find paying work. “Conditions are really bad in Moscow, he doesn’t have any money. If he finds some money, he is going to use it to come back home,” Firuz said. To make ends meet, they have been taking loans from a local bank to pay for food, but with interest rates well above 10 percent, repayment can be difficult.

Last year Firuz rented a *dehqon* farm in the hopes of growing onions. To access water for the *dehqon* plot he signed a contract with the local WUA, and while he did have water, the soil quality was poor, leading him to give up on the idea this year. Since his lease on the farmland ended, he is unsure where he stands with the water provider. He pays his water fees and has attended meetings on irrigation, but the topic of discussion is invariably just a directive to gather together with your neighbors to clean the canals and little attention is paid to the absence of adequate water flowing down these newly dug out waterways to their kitchen gardens. “I went [to the association for help] but it wasn’t useful. You go to the association and they send you to another one [irrigation service provider office, like *vodkhoz*], and then to another one, and no work ever gets done...I complained a lot, but anyways it is still like this...Every year the *vodkhoz* takes our money for water, but this water makes us suffer so much,” Firuz said with sigh.

Firuz is unsure why the water schedule has been changed so that they no longer receive water at appropriate intervals, but if one thing can be said, his problems do not stem from a lack of proximity or opportunity to interact with WUA leaders. Sitting on a raised earthen platform covered with thin mats in his yard, you can just see through the spindly trees that edge his property into the yard of the *raisi mahalla*. Simultaneously acting as the chairman of the WUA,

this man assured me just twenty minutes earlier as we chatted in his sitting room, that there were no shortages of water for kitchen gardens, stating “we give water turn by turn, and it is enough for everyone.”

As discussed in Chapter Two, the cultivation of food crops on kitchen gardens has taken on new significance in the wake of Tajikistan’s independence in 1991, serving to stabilize income and nutrition as farmland cultivation and labor migration, the primary money-making opportunities for rural households, provide cash inconsistently and for a limited number of families. But the capacity of these plots to serve in this role is tied to the accessibility of irrigation water. The introduction of WUAs by development actors was intended to draw on community knowledge and collaboration to create an inclusive organization capable of regulating irrigation water delivery in a way that is responsive to user needs and improves overall water access. Yet in the case of Firuz, the extent to which his local WUA is willing or able to respond to the irrigation needs of his household garden is questionable. Picking up this uncertainty, the proceeding chapter analyzes how the institutional practices and policies surrounding WUAs reflect the current need for improved water access on both *dehqon* farms and kitchen gardens.

Scholars examining community-based natural resource management organizations outside of Tajikistan have observed the potential for these institutions to exclude certain segments of the community, both formally, by barring their membership and informally, through organizational practices that have socio-cultural significance and effectively prohibit participation. After reviewing this literature, with particular attention to the ways that irrigation associations globally have and have not been responsive to the needs of multiple water users, this chapter turns to an analysis of WUAs in Tajikistan with regard to inclusivity. I begin by

examining the legal framework that establishes WUAs and the guidelines set out for organization membership. But, recognizing that these words have little significance outside their application, I follow this section by discussing how the inclusion of kitchen gardens in WUAs is both verbally presented and practiced or experienced by key actors in water reform: government authorities, USAID affiliates, WUA officials, and rural households.

In Tajikistan, legal frameworks state that only *dehqon* farm managers can be members of a WUA, marking a formal exclusion of households that only possess kitchen gardens plots from full involvement in the association. Nevertheless, some members of the government and development community profess to support household inclusion into WUAs, and believe it is possible under current national law. I argue that despite these claims, the inaction of these actors to support the incorporation of irrigator households into these organizations, either through a revision of the law or the nature of external assistance to associations, has in effect realized the legal ruling regarding membership, prohibiting households from formal participation.

3.1 Community-based management to serve all resource users?

Community-based natural resource management has been framed as a way to facilitate cost-effective collective action that meets the needs of resource users. This approach has not, however, risen to prominence without critique. Alongside the growing popularity of community-based natural resource management, a rich body of academic literature expressing concern that this development strategy may not consistently result in anticipated outcomes has also developed. Writing in 1999, Frances Cleaver argued that “there is little evidence of the long-term effectiveness of participation in materially improving the conditions of the most vulnerable people as a strategy for social change” (597). Her conclusion was echoed by scholars throughout

the 2000s, who, in reflecting on the results of community-based or participatory development projects state that “the application of such approaches...face serious challenges and constraints” (Bruns 2007), “participation is not the panacea many assume” (Agarwal 2001), and “sites across the world bear marks of failed projects touted as ‘participatory’ that have not fully, or meaningfully, involved stakeholders at multiple scales” (Goldin 2013).

This is not to say that all participatory approaches were met with disappointment, but rather that enthusiasm for this model was tempered by growing recognition that the approach’s ability to empower community members without exception and ensure the equitable distribution of resources was overstated, often masking underlying inequalities provoked or exacerbated by project design and operation. The following sub-section elaborates on this critique. After reviewing literature that discusses the potential for participatory development to create or aggravate inequitable resource control, I turn to an examination of one reason why this outcome occurs. Namely, initiatives that are implemented by actors who do not themselves reside in the target area can result in project design and execution that is grounded in an idealized understanding of the community, where intra-group homogeneity and shared interests are assumed. I then consider how WUAs, as forms of participatory development grounded in this problematic understanding of community, may reinforce or create, rather than alleviate, uneven geographies of water access.

3.1.1 (In)equitable resource control

In their provocatively titled 2001 book *Participation as Tyranny*, Bill Cooke and Uma Kothari pose the question “do group decisions lead to participatory decisions that reinforce the positions or the interests of the powerful?” (7-8). This query has been the subject of significant

scrutiny in which scholars, extending the object of study to group activities as well as decisions, have critically argued for the potential of community-based natural resource management projects to result in elite capture or the exclusion of certain segments of society from resource control or access. For example, in 1997, Bina Agarwal noted that despite being celebrated for a design that centered on community participation, the implementation of the Joint Forest Management Program in India resulted in the exclusion of women from decision making bodies and their loss of forest use rights. Signaling that the phenomenon is present across continents, Emily Van Houweling and colleagues (2016) found that a participatory project to install hand-pumps in Mozambique deepened existing political and income-based divisions in the community as some individuals gained access to an improved source of water, while others did not. In line with these two research projects, case studies globally have shown that women and poor households are disproportionately susceptible to exclusion as a result of the introduction of community-based natural resource management institutions. Nicholas Hildyard and colleagues (2001, 56) aptly summarize the results of these projects when they state that “far from unsettling oppressive relations, what passes for participation frequently serves to sustain and reinforce inequitable economic, political and social structures.”

Awareness of the ability for community-based natural resource projects to create or reinforce inequity in resource access for “beneficiary” populations is not limited to academia. Cooke and Kothari (2001, 1) note that their “conversations with practitioners...were often characterized by mildly humorous cynicism, with which tales were told of participatory processes undertaken ritualistically, which had turned out to be manipulative or harmed those who were supposed to be empowered.” Yet, while recognition of the potential for adverse effects may be present among development practitioners, scholars argue that the implementation of

participatory approaches has suffered from a persistent inattention to the complexity of social dynamics in communities (Leach et al. 1997), a practice that Cleaver (1999, 598) explains has been consciously rationalized through the argument that “considerations of power and politics” are often “divisive and obstructive.”

According to Cleaver (1999), when social difference is acknowledged by project implementers, it is through the application of broad labels onto groups of people, such as “women” or “farmers.” These labels fail to account for the dynamism and complexity of identity and rural livelihood strategies as well as how the interests and needs of individuals may shift overtime. Adequate concern with the variegated impacts of participatory development on community members of different genders or socio-economic standing is moreover unlikely to be present in project follow-ups (Leach et al. 1997; Bruns 2007; Van Houweling et al. 2016). Van Houweling and her colleagues (2016) state that in participatory water management projects, the detection of inequalities in water access between different social groups is rarely built into project monitoring and evaluation. Similarly, Yu (2016, 967) writes that “despite the widespread interest in WUAs in China, there has been very little empirical information on their actual processes or their real impacts, particularly from in-depth study of different perspectives.” Speaking more generally, Ruth Meinzen-Dick and Lee Ann Jackson (1996, 11) write that “irrigation research documents rarely acknowledge the social differences among various users.” The relative failure of many community-based initiatives to result in inclusive outcomes is often attributed to this inattention, which has resulted in the tendency for externally imposed community-based projects to advance a de-politicized version of the community (Agrawal and Gibson 1999), and it is to this argument that the chapter now turns.

3.1.2 ‘Imagined’ community

Arun Agrawal and Clark Gibson (1999, 635) argue that in one sense, “all communities are imagined communities,”¹³ with the understanding that the existence of a “community” depends upon the perceptions of its members and their belief in a sense of common identification. However, the majority of community-based water management organizations are not rooted in an understanding of community that has been self-defined by the local population, but rather a community that has been “imagined” by external actors, namely the government agency or non-governmental organization (NGO) designing and implementing the project. Agrawal and Gibson (1999) note that externally imposed community-based projects advance an idealized version of community, which is characterized by a homogenous social structure. Social homogeneity is generally thought of as the existence of shared characteristics, such as language, ethnicity, religion, class, and levels of wealth that lead to a shared set of norms (Agrawal and Gibson 1999). As mentioned earlier, shared norms are thought to facilitate inclusive decision making (Bruns 2007). For example, irrigation user groups may be created to make decisions on behalf of villagers regarding water use and control, with the assumption that members of these groups have a shared set of interests and goals by nature of their socio-economic or cultural similarities and close living proximity. These “shared interests and goals” will then allow for effective cooperation. Cleaver (1999, 604) refers to this ideal as the “solidarity” model of community.

¹³ Agrawal and Gibson do not connect their use of this phrase to the influential text by Benedict Anderson entitled “Imagined Communities: Reflections on the Origins and Spread of Nationalism” (1983). However, one can still see parallels in their use of this language, as Anderson (1983, 50) argues that the nation is an imagined community in so far as it is grounded in shared comradeship that is presumed to exist across residents by nature of their residence within the territory, ignoring the existence of inequality or violence within this same space. Similarly, Agrawal and Gibson (1999) discuss communities as imagined to signify an assumption by development actors that individuals who reside within proximity to one another share common interests and understandings, discounting the potential for divergent positions or unequal, exploitative power relations.

“Beneficiary” populations are likely to have some similar characteristics, and indeed Agarwal (1997) states that success stories in community-based natural resource management literature generally occur in areas that have a relatively established sense of collective identity. However, the utility and validity of describing a group as homogenous is questionable, for, as Agrawal and Gibson (1999) rightly point out, stratification in human populations will always exist to one degree or another. Meenakshi Ahluwalia (1997, 34) stresses that “it is imperative that ‘the community’... be acknowledged as comprised of people with diverse interests and resources who may actively shape the outcome of any intervention.” However, pressure to execute projects that conform to the model of community-based natural resource management upheld by development actors, often result in a papering-over of this diversity during project execution. For example, Cleaver (1999, 604) writes that

“field workers on a community-based water and sanitation programme in Tanzania were reluctant to publicly refer to, or even admit socio-economic differences within the communities with which they worked. They had dropped wealth ranking from their PRA [participatory rural appraisal] exercises, fearing that this highlighted inequalities and saw the public acknowledgement of difference as incompatible with the desirable model of solidarity necessary for the smooth functioning of the project.”

The effects of “papering over” how axes of social differentiation, particularly gender and class, interact with prevailing norms, structures of power and the spatial distribution of resources to affect individuals’ ability to access water and participate in management activities will be discussed at greater length in Chapter Four.

As institutions that are overwhelmingly created under projects designed or financed by development organizations external to target population, WUAs are likely formed on the basis of a similar imagined community. Indeed, this supposition is reinforced by empirical observations of the hegemonic role donors play in WUA formation. In their evaluation of WUAs in Jordan, Daanish Mustafa and colleagues (2016, 167) referred to the institutional structure of these

organizations as “donor induced.” In the context of China, Yu (2016, 972) writes that “WUAs are being implemented in a mandatory, top-down way that seeks to ‘manufacture’ WUAs rather than achieve genuine public participation or empowerment.” The next section explores the consequences of such design practices in more depth, by examining the mechanisms of how WUAs produce exclusion. Namely, it will discuss how the institutional processes associated with WUAs promote a “single-use mandate” that privileges water for farm-level irrigation, excluding domestic users of irrigation water.

3.1.3 WUA Design

Development interventions that aim to bring about greater community control of water management activities are most often grounded in the creation of formal institutions through which natural resource management decisions and activities can be organized (Clever 1998). Clever (1999, 601) asserts that this is in part because such institutions or organizations are viewed as a way to “render legible community,” in other words, “translate individuals into a collective endeavor in a form which is visible, analyzable and amendable to intervention and influence.” Prior to intervention, communities generally have established systems of water management that have developed over generations, adapting to changing conditions and the needs of users (Clever 1998; Clever and Elson 1995). While the presence of informal modes of water management may be recognized by project architects, focus remains on the formation of new institutions, which can lead to the replacement of traditional approaches or the creation of parallel processes that disrupt existing systems of water management. For example, a project undertaken in Tanzania to create water user groups undermined current processes of water management that were carried out through less formal channels (Clever 1999). This challenge is

not limited to specific contexts, as Cleaver (1998, 355) also found that in the Nkayi District of Zimbabwe a formal organization for water management was incompatible with local decision-making norms, stating that “the exclusionary nature of [water] committees was not easily compatible with the inclusive nature of decision making” regarding water use in the village.

WUAs are similarly constructed by donors as formal organizations. As a part of this process, the institutional mechanisms of WUAs are reified through the drafting of laws and by-laws. This initial design generally dictates the practical terms of service, as Meinzen-Dick (2007, 15202) argues that the “top-down imposition of rigid structure[s]...and uniform rules” created for WUAs give the organizations little room to adapt to local needs. This is the veritable antithesis of the responsive structure that community-based natural resource management organizations are envisioned to possess. With inflexible policies informed by practices that overlook the heterogeneity of populations in target sites, WUAs often fail to service all water users. This process is most clearly seen with regard to the delineation of WUA membership policies, which create organizations that are designed to serve farm level irrigators, and in effect, are inattentive to the needs of other users.

The initial stages of WUA formation involve defining individuals in the community per their “relation” with the organization, including who is and is not a member of the WUA (Family Farming Program Staff, 2013). These decisions are informed by perceptions of legitimate or relevant “water users” in a given context. Yet, beyond a shared requisite for water, the actual phrase “Water Users’ Association” indicates very little about the characteristics of would-be members, a semantic nuance that could be interpreted as indicating an inclusive membership policy whereby all community members who “use water” in pursuit of life or livelihood are eligible. Indeed, ambiguity as to who is “water user” characterized early discussions of WUAs.

Writing in 1989, Hunt (1989, 81) stated that “the water user is continually referred to in the WUA literature, but hitherto without specification or analysis.”

Hunt (1989) goes on to explain the water user is presumably the individual who applies water to the field *and* is directing crop cultivation. Although, he notes that an assumed connection between the two roles is problematic, as the owner or manager of the farmland may not be the same individual responsible for field irrigation (Hunt 1989). Nevertheless, an examination of WUA projects implemented globally since the time of his publication shows that Hunt’s understanding of who is a “water user,” in the context of WUAs remains largely accurate. A “water user” has emerged in WUA literature as synonymous with an individual who cultivates their own farmland, as opposed to a household plot. This is demonstrated in a 2016 article by Mustafa and colleagues. They write that “in Jordan WUAs, despite being an international donor-driven institutional innovation, on balance, have had a positive effect in terms of allowing collective bargaining and addressing water users’ concerns” (Mustafa et al. 2016, 74). Rather than an encompassing examination of how WUAs impacted *all* water users, as is seemingly implied, their study was in fact limited to operated, tenant, and contract farmers (Mustafa et al. 2016). Similarly, Yu (2015) writes that in China WUAs are designed to “represent and protect local water stakeholders’ own benefits” but they simultaneously exist as “farmers’ organizations” thus implying an assumption that farmers are the only or primary water user (2015). It is unlikely that farmers are in fact the only water users, as rural water sources are generally used for a variety of purposes including drinking, cleaning, watering animals, making bricks, milling, fishing, and of course household plot irrigation.

WUA membership stipulations reflect an understanding of recognized water users as land owners or managers cultivating farm plots, generally for commercial production. In a

comparative study of the legal framework for WUAs in Colombia, India, Mexico, Nepal, the Philippines, and Turkey, Salman Salman (1992) found that “most bylaws restrict membership of the WUA to the registered landowners in the hydraulic unit who are engaged on a full-time basis in farming” with WUAs in some countries extending membership to tenant farmers. A review of other scholarly publications and grey literature similarly indicate that WUA membership requirements most often limit eligibility to landowners or managers (Zwarteveen 1995; Subramanian, Jagannathan, and Meinzen-Dick 1997; Sehring 2006; Qiao, Zhao and Klein 2009; Mustafa et al. 2016).¹⁴ In this way, WUA requirements for membership eligibility are reflective of and contribute to a single-use mandate to serve farm-level irrigators, demonstrating limited consideration of the complexity of water-use landscapes in rural areas.

Based in a limited understanding of community dynamics, WUA institutional design thus leaves residents who do not possess crop-land but depend on irrigation for their kitchen gardens ineligible for membership. Limiting membership to landowners or managers also effectively limits membership to men, as women globally are less likely to have formal access to farmland. As women play a primary role in the cultivation of household kitchen gardens, the irrigation needs of this plot may be further sidelined.

Other, informal membership stipulations beyond initial eligibility may also effectively limit the inclusion of water users with interests other than farm-level irrigation. For example, the ability to take advantage of membership benefits, including access to water, are often tied to contributions to the organization’s operations, monetarily or in donated labor (Ahlers and Zwarteveen 2009). Both these requirements have the potential to exclude water users, namely

¹⁴ There are exceptions to this, in which WUA membership is open to all community members (See Nicholas Faysse’s 2014 description of WUAs in the report “An assessment of small-scale users’ inclusion in large-scale water user associations in South Africa”) or are focused exclusively on drinking water, however, these appear to rare.

poor households and women—groups which frequently cultivate smaller garden plots as opposed to farmland—as they have less time to contribute to the collective management of irrigation water infrastructure and less access to cash (Cleaver and Elson 1995; Meinzen-Dick and Zwarteveen 1998). Their inability to comply with these “duties” can mean these community members are ineligible to participate in decision making bodies and risk “sanctions such as exclusion from one or more water turns or the payment of fines” (Ahlers and Zwarteveen 2009, 411). This outcome reinforces an understanding that the rigidity of WUA design, including requirements for membership, creates organizations that lack flexibility, making them unable to respond to the complexity of community dynamics and the needs of users other than farm-level irrigators.

3.2 Exclusion in Tajikistan WUAs through paper, presentation and practice

As discussed, the first WUAs in Tajikistan were created under the World Bank Farm Privatization Project, which ran from 1999 to 2005. Following this initial precedent, all existing WUAs were created with the financial support and administrative guidance of international donors in a top-down process (Sehring 2006; Abdullaev et al. 2010). Echoing the problematic notions of community described above, Sehring, who is one of the few scholars to have published on WUA creation in Tajikistan, writes that most of these donors proceeded to design their WUAs with “a rather unreflected, idealized notion of the ‘village community’” (2006, 35). Coming to the same conclusion as scholars who have studied this phenomenon in other contexts, Sehring (2007) argues that WUAs in Tajikistan thus have the potential to reflect pre-existing social hierarchies and promote power structures that leave segments of the community silenced and invisible.

This section elaborates on Sehring’s supposition, critically examining the extent to which the institutional mechanisms of WUAs, as enshrined in legal frameworks and both presented and practiced by government officials, USAID affiliates, WUA leadership, and rural households, allow for the full participation of households that only have kitchen. Through this analysis, I show that a failure among development actors to adequately understand or consider multiple uses of irrigation water in rural communities has produced uneven access to water delivery services and association membership, as kitchen garden irrigators are without a clearly defined water provider and are barred from formal participation in the WUA. Clearly oppositional to stated goals of inclusivity, the direct and indirect impacts of this policy on local irrigation management and overall wellbeing are discussed in Chapter Four.

3.2.1 Paper¹⁵

Passed in 1994, the Constitution of the Republic of Tajikistan establishes that all the water located within the country’s boundaries is owned by the state, which then “guarantees their effective use in the interests of *the people* [emphasis added]” (Chapter 1, Article 13). Implying that everyone is thus entitled to water access, this language is repeated in the 2000 Law of the Republic of Tajikistan Water Code. The Water Code also provides more explicit detail as to who is considered a “water user” and thus who may be provided water by the state. In Section 2, Chapter 5, Article 27 the Water Code states that a water user is “any legal entity or individuals regardless of property that operate on the territory of the Republic of Tajikistan...” This statement would imply that households that only possess a kitchen garden can formally be

¹⁵ All legislation was examined in English and Tajik by the author with the assistance of lawyers in Tajikistan. A Russian language translation of the Law of the Republic of Tajikistan on Water Users’ Associations was also used by lawyers when discussing interpretations. English translations of these laws were provided by USAID.

considered water users and have a right use to water; however, the extent to which their needs are prioritized in relation to other uses is more ambiguous. The Water Code explains in Section 2, Chapter 6, Article 30, that “water bodies will be given firstly to satisfy drinking and social needs of the population.” As discussed in Chapter Two, kitchen gardens play an essential role in ensuring household health and wellbeing, and so one may argue that irrigation for these plots would fall under “social needs,” but this is left open to interpretation as no further explanation is provided.

As discussed before, households with irrigated kitchen gardens rely on water from tertiary canals for their plots. When this water is diverted it will then flow down *joiborho*, ditches, running along the sides of village roads, during which time households can guide the water into their yard through another set small of hand dug channels and irrigate their crops. In areas



Photograph 10: Joiborho in Khatlon Province, Tajikistan. Left: Cement lined joibor running between road and household compound wall. Right: Joibor running from a watercourse under a household compound wall into their yard. Photos by author.

covered by a WUA, responsibility for scheduling the delivery of water along the tertiary canal is generally understood to lie with this organization. But two outstanding legal issues complicate a conclusion that the WUA officially has responsibility for servicing kitchen gardens.

First, Saifudin, a water specialist for the USAID TAWA project explained that in southern Tajikistan, most irrigation infrastructure located within WUA territories has not yet been formally documented and turned over to the organization. For villages, this means that the channels that carry water from tertiary canals to their homes may still be under the control of the *jamoat* (sub-district administrative authority), which took control of this infrastructure after the dissolution of collective farms. Although they have no role in water delivery or canal

maintenance, Saifudin explained that *jamoat* officials are sometimes reluctant to give up formal control of this infrastructure, leaving kitchen gardens without an *active* water service provider and WUAs with no formal responsibility for their water access. Saifudin noted that the World Bank is creating an inventory of irrigation infrastructure in southern Tajikistan to facilitate the formal transfer of control. If this first issue is resolved, a second legal obstacle to household membership remains. A narrow definition of who WUAs should serve laid out by 2006 Law of the Republic of Tajikistan on Water Users' Associations places households that only have kitchen gardens outside of the arena of official WUA concern. Section 2, Chapter 7, Article 43 of this law explains that WUAs "are created with the purpose to...ensure fair, effective, and timely distribution of water" to *dehqon* (farmers) farms, with no reference to any kitchen gardens irrigators or any other water users. There is a similar silence as to the status of kitchen gardens in regard to WUA membership in the Law on WUAs. The absence of any discussion of these plots suggests that they were not considered in the drafting of water related legislation, illustrating a bias towards *dehqon* farms and commercial agriculture on the part of law makers and other actors involved in the design process.

With no explicit reference to kitchen gardens in any core piece of water management legislation, the responsibility of WUA leadership to provide these plots with water and incorporate the irrigators of these plots as members is subject to interpretation. But Dilbar and Umed,¹⁶ lawyers who specialize in property law and consumer rights, respectively, say a strict reading of the Law on WUAs concludes that households that only possess kitchen gardens cannot be members of associations and do not have the right to request water for their kitchen plots from the WUA as a water provider. This stems from the definition of members of as "legal

¹⁶ I consulted Dilbar and Umed independently from one another and they do not work together.

entities with the right to use land for agricultural production” in Chapter 1, Article 1 of the Law on WUAs. According to Dilbar and Umed, kitchen gardens are not legal entities. While individuals may, under some circumstances, be considered legal entities, kitchen gardens still are not considered “land for agricultural production.” As such, households that do not possess *dehqon* farmland – the majority of rural households in Tajikistan – are not officially eligible for WUA membership and thus afforded no formal voice in water management decision making processes.

3.2.2 Presentation and practice

Legal rulings, however, also exist outside of their physical manifestation as information that is processed, presented, and put into practice by different actors. Perreault (2015, 436) stresses the importance of looking at practice noting that outside of stated intentions, “the actual *practice* of participatory development, particularly in the programs of large transnational aid agencies, has been criticized as managed and selective in terms of who does and who does not have a right to participate, as well as the forms participation takes.” This subsection examines how participatory development is practiced in the case of the introduction and operation of WUAs in Tajikistan focusing on activities of the government, USAID central and project staff, WUA leaders, and rural households.

Government officials

As noted in the introduction, speaking with government officials in Tajikistan is increasingly difficult, and as a result, interviews were only conducted with three state employees. Nevertheless, their responses were enlightening. Jamshed, from the Anti-Monopoly Agency, and Muboriz, a high-level representative of the Agency for Land Reclamation and Irrigation both expressed confidence that according to the law households that have kitchen gardens can be members of WUAs if they agree to pay a membership fee to cover WUA services. Muboriz explained “Anyone can be a part of the Association. It does not matter if you have a *dehqon* farm or if you have a kitchen garden, you can be a part of the association... In Tajikistan you have a freedom of choice, it is a democracy, but it must be done according to the law and with the permission of the government.” He went on, however, to suggest that while they *can* be members, they *should not* be members as technically kitchen garden managers are supposed to irrigate their plots with piped drinking water, not the water that flows through canals to *dehqon* farms. But he says he recognizes that drinking water is scarce and so using it to irrigate is imprudent and in practice more than 90 percent of Tajikistan’s kitchen gardens are irrigated with canal water. As exemplified by the analysis of Tajikistan’s legislative framework for irrigation above, his statements indicate that the question of how to ensure that kitchen gardens have legal access to adequate water has not been fully resolved.

An understanding that households with kitchen gardens can join WUAs was not, however, universal among government employees. Unlike Jamshed and Muboriz, Zebo, the head of a water users’ department within a Land Reclamation and Irrigation Authority, works directly with WUAs, coordinating the release of water to secondary and tertiary canals. Zebo stated clearly that households that only have a kitchen garden cannot be members of WUAs and that

this position is limited to *dehqon* farmers. She further noted that when she attends WUA meetings as a state representative, the individuals in attendance are all *dehqon* farmers. Zebo's understanding of current membership policies is reinforced by a draft of the Land Reclamation and Irrigation Development Strategy in 2015, which discussed the need to extend WUA membership to water users other than *dehqon* farmers (Chemonics Review of WUA Law 2016). The need for this policy change, indicates that currently households are not and cannot currently be WUA members.

Changes to Tajikistan's water management system are still underway and the Ministry of Energy and Water Resources' plans, as laid out in the "Water Sector Reforms programme of the Republic of Tajikistan for 2016-2025,"¹⁷ do include activities that *could* address some of the legal barriers outlined above, namely the absence of a strong legal basis for WUA organized water delivery to kitchen gardens and household membership. But, as high-level officials from the Agency of Land Reclamation and Irrigation, like Muboriz, are insistent that households should not take water from tertiary canals and that they can *already* be members of WUAs, I question to what extent these changes will be made. Nevertheless, the possibility does exist as a part of the following actions. From 2018 to 2019 the Ministry plans to work with the Agency for Land Reclamation and Irrigation and WUA leaders to develop "mechanisms for transfer of tertiary and, where necessary, other irrigation infrastructure to the balance [legally defined jurisdiction] of the WUA." If "other irrigation infrastructure" includes intra-village watercourses, then this would require that WUAs ensure that adequate water is delivered to household plots. Second, from 2016 to 2017, they planned to develop "revisions and amendments to the WUA Law," which could include the formal extension of membership to kitchen garden irrigators.

¹⁷ I was provided with an English translation of this report by a contact the Ministry of Energy and Water Resources.

While the process of identifying revisions was begun, to my knowledge no changes have been official made as of this writing. All the funding for these two activities will be provided by international donors. The role of international development actors in both financing and executing water reform mandates investigation into how they understand the relationship between WUAs and households with kitchen gardens as well as how they act on this understanding.

USAID affiliates

Individuals whose work was connected to WUA creation initiatives by USAID voiced an understanding of kitchen gardens' status similar to that of Zebo, though with significantly more hesitation. Abdullah, an agricultural extension specialist for the USAID TAWA, explained that to the best of his knowledge WUAs are technically responsible for providing water to kitchen gardens, but that in practice associations pay them little heed and do not encourage the active participation of households in meetings. In large part, he attributes their disinterest in working with households to the difference in land size, and thus amount of water delivered and fees collected, between kitchen gardens and *dehqon* farms. He explains "for example when a representative of the association comes and asks a household to pay water service fees for kitchen garden it is maybe 10 TJS or 20 TJS, but for *dehqon* farm, they must pay 2,000 TJS or 20,000 TJS." Abdullah's comments highlight that WUAs have a stronger financial incentive to ensure that *dehqon* farmers receive adequate water and are amenable to paying their service fees, in comparison to households. *Dehqon* farmers who sign membership agreements with the WUA also pay membership fees, which as non-members, are not paid by households. While membership fees are retained by the WUA to support operating costs, irrigation water service

fees are passed by the WUA to the *vodkhoz*, who Abdullah feels, also devotes greater attention to *dehqon* farm irrigation.

Saifudin, a water specialist for TAWA who is directly engaged in WUA strengthening activities reinforced the narrative presented by Abdullah. As it stands, Saifudin explained that

“I do not have such a clear understanding of household distribution of water, because we only work with *dehqon* farms... You are right, it [irrigation] is very important at the household level and the FtF we will concentrate on strengthening the kitchen gardens, but the *dehqon* farms are very important as they grow more... the kitchen garden plot is small, maybe 0.00-something hectares, but here they [*dehqon* farms] are 10 hectares and they grow many different kind of crops for sale at local markets or in Dushanbe.”

However, Saifudin expressed that this is not how the focus of their work must or even *should* be directed. The TAWA is only scheduled to continue until September 2018, but he thinks it will be extended for another few years following this end date. During this time, he is hopeful that they will find a way to incorporate households as members. He feels doing so would be beneficial both for the WUA, as they gain a new base of financial and practical support, and for households, as they are able to formally call on the WUA for assistance. Right now, he explained, his hands are a tied, as amendments need to be made to the Law on WUAs to clarify that households can be members. When conducting a review of the Law on WUAs, a colleague of Saifudin wrote that that the law should be revised to “allow water users other than farmers to become members of the WUA [and] enable WUA to supply water to non-members” indicating that the position of households is a concern among local staff (Chemonics review of WUA Law 2016). As referenced above, Saifudin was adamant that infrastructure also needs to be formally turned over to the association. Until this happens he is at a loss as to how, logistically, he can support households that only have kitchen gardens in gaining WUA membership.

While project staff like Abdullah and Saifudin can influence how agricultural projects are carried out, they are acting within a large initiative framework established by USAID employees.

As such, to understand why the question of kitchen garden water delivery membership was not clarified prior to project implementation or at any point within the last 13 years,¹⁸ I turned to USAID staff themselves. Matthew, an agricultural specialist for USAID’s central office in Tajikistan is responsible for overseeing the TAWA and was hired six months into its implementation. While he had been in his position for just over a year when he spoke, his statements indicated that during that time there had been little if any discussion of household irrigation needs at the agency level and a presumption that *dehqon* farmers are the most important, if not the only, “water user” to be considered with regard to the association. Below is an excerpt from our conversation.

Katie: Do you know who USAID irrigation projects were intended to benefit?

Matthew: That’s actually a good question – I would have to go back and look at the reports again. I have never actually read the reports through that lens. I guess I just have always read them with *dehqon* farms in mind as the target...

Katie: So, from the way it was discussed and from what you just said, you hadn’t heard much about households in connection with WUAs?

Matthew: Yes, I hadn’t really thought of it that much. I think what you are saying makes a great point. But yes... I guess I hadn’t really even thought of household gardens... I think a lot of the beneficiaries that we work with really just have their household plots.

Doug Vermillion, an independent consultant who worked with USAID in 2013 to design a strategy for supporting the water sector, including WUAs, explained that Matthew’s attitude toward household irrigation is not an isolated case. Rather, he said, there is a tendency among USAID actors, and water reform initiatives more generally to “fixate” on farmers without adequate consideration of other users of irrigation water. He explained that the amount water used by kitchen gardens is often considered inconsequential in comparison with that required by *dehqon* farmers. But he argues that using the volume of water required by these two groups as a measure of their importance is a misguided. While the amount of water kitchen gardens use may

¹⁸ Implemented by Winrock International from 2004 to 2010, the Water User Association Support Program, was the first USAID supported WUA project.

be small, its availability has serious implications for the health and wellbeing of agrarian households. Abdullah, an extension officer working for the TAWA agreed, arguing that the importance of kitchen gardens, not only for households but the economy in general, is often underestimated. Remittances from migration have made up between half and one-third of Tajikistan's GDP over the last decade, but Abdullah says that if the monetary value of kitchen garden produce was calculated and added up he estimates it would exceed that of migration.

“Why? Because they save so much money with their kitchen gardens. They don't have to buy potatoes and tomatoes. Everything that is necessary for life they can get by cultivating their land. They can buy food if they want, but the amount of money sent by household labor migrants is generally not enough to buy quantities of produce that match those harvested from kitchen gardens. So the amount grown on kitchen gardens may look small, but [take for example, that]...last year, Khatlon province produced 4,000 tons of lemons, 78 percent of which were from kitchen gardens...These 4,000 tons of lemons are equal to 20 million USD at market for the economy of Tajikistan. Or dried fruits! In one year, Tajikistan exports 100,000 tons [of dried fruit] to Russia and Kazakhstan. Its hugely profitable. I think now dried fruit is more important for the future of the Tajik economy than aluminum or cotton...I think about 50 percent [of all these fruits come from kitchen gardens]. For example, apricot, there were 68,000 tons produced and from this 46,000 tons were from households. This is because when the land size is small, you have better control over it and can work it better. If in my household I have four or ten trees I can look after all of them, but when I have more than 100, sometimes I may not be able to find the time to look after them or find the money for fertilizer and such.”

According to Abdullah, discounting the role of kitchen garden cultivation will have serious, negative implications not only in the short term as food security is threatened, but also for long term economic development.

Vermillion notes that when he was working for the FFP in 2013 a discussion was initiated on the topic of how kitchen gardens should be integrated into WUAs; however, he explains that the matter was unresolved. Reflecting on this process, he states,

“I think the government was considering just farmers [as potential WUA members] and I can remember suggesting that all users of water that comes down the irrigation system canals should be included as members and should be represented. Why? Because you are going to need to allocate water and distribute water to all users. The value of that water and the economic productivity of that water will be quite different, but at the

family level it will be no less important [than the farm level] ...I don't recall somebody saying 'no, these non-farm users should not be members' ...I felt there were no strong objections that gardens be included as members...but there was no real conclusion made either."

Instances whereby questions of kitchen garden irrigators' representation within WUAs are tabled have continued to occur within USAID projects in Tajikistan. Saifudin noted that households do, in theory, have a representative who attends general meetings, but in practice he does not think this occurs. He explained to be in mid-June that he hoped to find the time to figure out the status of this supposed practice by the end of July. But by our last conversation in August, this had yet to occur.

A collective understanding of the irrigation community as defined primarily, if not exclusively by *dehqon* farmers is reflected in the way in which USAID has organized its agricultural projects over the last ten years. Under TAWA, and the projects that came before it, the "water component," which addresses irrigation, has been separated from the "kitchen garden component." In reviewing the "kitchen garden component" training modules scheduled to be held with women from village households in 2017 and 2018, it became apparent that there are no plans for dedicated discussions of irrigation water use, their use rights, and available sources of support. This reinforces an understanding that ensuring the adequate irrigation of kitchen garden plots is understood by USAID project planners to be of lesser importance than ensuring water access for *dehqon* farms.

The above dynamics exemplify arguments made by critics of community-based natural resource management projects, wherein external actors, who play a heavy-handed role in project design and implementation, do not afford adequate attention to the needs of all resource users, leading to the creation of an organization with a single-use mandate to only serve farms. While local project staff, the majority of whom interact on a daily basis with, and are often from, rural

communities, recognize the challenges posed by current membership policies their ability to act is, in part, constrained by the priorities laid for them by USAID. Meinzen-Dick and Bakker (2001) highlight that neoliberal development institutions frequently focus on the irrigation needs of “productive” or commercial agriculture over domestic or household cultivation, a trend that is on full display in this case study. As USAID staff have failed to prioritize activities that establish a means for households to successfully negotiate water access under WUAs, they have in effect reinforced the formal exclusion of kitchen garden irrigators from the new participatory, community-based water management institutions they created.

WUA leadership

Conversations with individuals who held leadership positions within the WUA highlighted that a distinction exists in whether the associations can accept households without *dehqon* farms as members in principle and in practice. In principle, all WUA leaders save the chairman of WUA 5, felt that they could, within the bounds of the law, incorporate kitchen garden irrigators as members. However, in practice, only WUA 2 has taken steps to do so, signing agreements with households who have plots over 0.5 hectares in size. However, the chairman of WUA 2 explained they are unsure of what to do next, as there is an underlying bifurcation in opinion among his staff and existing members of the WUA (*dehqon* farmers) regarding whether or not they have the organizational strength to take on households with smaller plots as members.

Inaction on the part of other WUAs to formalize household management stemmed from a similar sense of doubt in their organizational capacity. The chairman of WUA 3 stated that he

felt it would improve local irrigation if they were to bring households in as formal members. He says,

“for example, we know that this guy, who has 0.4 hectares of kitchen garden land, and he has problems getting water, sometimes he has water, sometimes he doesn't have water. But if we had a contract, we would know exactly when we should provide him with water according to exactly what hour.”

But he explained, organizing to sign contracts and collect membership fees from the more than 1,500 households in his territory is beyond the ability of him and his three staff, as they are already struggling to work effectively with *dehqon* farms. When they were first established, both the chairmen of WUAs 2 and 5, noted that they were told to only work with *dehqon* farmers, a directive that now seems shortsighted as other users also draw water from the canals they are tasked with managing.

Even though most households are non-members, leadership in all five WUAs said they do send water to villages. As the chairman of WUA 5 noted, “there isn't anyone else, there is just us.” However, the processes behind this service provision differ in comparison to farm-level water supply and delivery. In general, WUA leaders calculate the amount of water they will need for their territory in ten-day increments. Based on these calculations, a request is then made to someone like Zebo at the local Land Reclamation and Irrigation Authority, who then authorizes the release of the requested amount of water. With the exception of WUA 2, none of the WUA leaders factor the amount of water needed for kitchen garden irrigation into their calculations, rather requesting water from the Land Reclamation and Irrigation Authority solely based on the amount needed for *dehqon* farms. This practice is likely to affect the ability of the organization to satisfy the irrigation needs of all users, a potential that will be elaborated upon in Chapter Four. The contract manager for WUA 2 explains that they are able to include kitchen garden needs in their calculations because he went house to house, knocking on the door, and asking

them to show him how the land they irrigate, so he could build-up and understanding of how much water would be needed.

Informally, the chairmen of other WUAs said they similarly work to engage with households. The chairperson of WUA 1 said that although her work is focused on *dehqon* farms, she visits households, listens to their concerns, and thinks about ways that their irrigation might be improved. The chairman of WUA 3 expressed similar sentiments, noting that WUAs are better able to respond to household needs than previous models of irrigation water management. “Before the association, the *vodkhoz* didn't pay any attention to kitchen gardens.... The association started, and it lightened the load on the people...we know where their crops are and what problems they suffer from,” he explained. The chairman of WUA 3, along with other WUA leaders, said households are welcome to come to meetings, though in practice few do. While such policies indicate that there are some opportunities for households to informally engage with the WUA, within a now formalized structure of water management this is no substitution for full membership, without which claim to water delivery services and support is weak.

Households

Household responses to queries as to whether or not they were a member of the association varied, though most, in agreement with the positions above, said they did not *think* they were. I emphasize *think* as there was considerable uncertainty among households in answering this question, with many unsure as to what the WUA was or what constituted membership. In practice, they said they primarily speak with their *raisi mahalla* regarding matters of water access, as he is a member of their village and they know him well. The fact that WUAs stretch across multiple villages challenges the notion that the organization will work

based on a “solidarity” model, as the extent to which they have frequent, productive communication and a “communal understanding” with individuals outside their village community is unlikely be uniform.

In speaking with those individuals who did say they were members, it became apparent that conflation was being made in many cases as the *vodkhoz* was confused with the WUA, meeting attendance with membership, and receipts of water service fee payment with WUA contracts. Regardless of membership status, most households felt the WUA functioned primarily to serve *dehqon* farms, not kitchen gardens. The *raisi mahalla* of the village of Sebiston, within the territory of WUA 5, said that though he just has a kitchen garden he did sign a membership contract with the WUA, but now he wants out. “At first I did not understand what the WUA was. Now I understand that there is no benefit for us.” Voicing similar sentiments, the *raisi mahalla* of the village of Navobod, located within the service area of WUA 2, said “The WUA should pay more attention to the villagers. There are only five to six *dehqon* farms, but there are more than 600 households (in his village). Now there are more conflicts. They give them [*dehqon* farmers] water first, before the households, so then they don’t give us much water.” As suggested by this *raisi mahalla*, an understanding of *dehqon* farmers as primary water users by those who support and operate these associations has material consequences – a reality which will be explored in the following chapter of this thesis.

Conclusion

Donors have committed to funding 91 percent of the budget for the Water Sector Reforms Programme of the Republic of Tajikistan for 2016-2025, a figure which affords them significant sway over the way that this program takes place. WUAs, as one component of this

program, are rewriting the management of water at the local level, presumed to bring about an increase in water access, crop yields, and food security through activities that are grounded in the self-expressed needs of community members. But, as highlighted by scholars globally, the way in which the “community” is understood by international development organizations is often problematic, tending towards a vision of agrarian regions as socially and economically homogenous. Informing project design, this blurry picture of rural life neglects underlying divergence in social or economic status and can result in exclusionary outcomes that are contradictory to the inclusive intentions of the initiative.

This chapter has explored the extent to which such a dynamic was present in the way that WUAs have been organized with regard to membership and service provision in Tajikistan, beginning with an analysis of the legal framework surrounding these associations. This was followed by an examination of how WUA membership and service provision policies were understood and actualized by the national government, USAID central and project staff, WUA leaders, and households. Clear throughout all these discussions was that WUAs were designed with a single-use mandate to ensure irrigation water for *dehqon* farms, and no significant attention was invested in establishing how households were to relate to these new “community-based” institutions, signaling that this initiative was built on a partial understanding of the irrigation landscape, be it intentional or not, wherein the need for water on kitchen gardens was disregarded. According to national law, WUA members can only be *dehqon* farms and the legal responsibility of these associations to deliver water to other users is tenuous. This formal exclusion is reinforced by the relative apathy of initiative organizers, namely the government and USAID central staff. For more than a decade, they have failed to prioritize activities that would support WUA leadership and local project staff as they seek to clarify membership and water

delivery policies as well as resolve barriers to household incorporation. In the chapter that follows, this thesis turns to the challenges brought about by this exclusionary structure and the way in which it undermines the central goal of WUAs under the FtF project—increased access to food among rural households.

Chapter Four

Undermining the initiative: Potential consequences of household exclusion from WUAs



Photograph 11: Water flowing to kitchen garden in Khatlon Province, Tajikistan. Photo by author.

Introduction

Before our interview, I asked the *raisi mahalla* of the village of Zafar¹⁹ to state the name of his village, a formality that marked the beginning of all my thirty prior interviews. “Pick one,” he replied. Putting my pen down and looking up, I clarified that I would change the names upon writing my report, so he needn’t worry about anonymity at this stage. “No,” he explained, “you misunderstand, our village has no official name, Zafar is simply a holdover from the farm that existed on this territory during the Soviet era.” The local government has denied his requests for formal village recognition, claiming there are too few households. “Pick something nice,” he says, “something like *Navbahor* (new spring season), *Chashma* (fresh water spring), or *Lolazor* (tulip fields), something that signifies our future if we can bring the water back.”

¹⁹ All village names have been changed by the author.

The village of Zafar is located at the end of an irrigation canal, preceded by a cluster of *dehqon* farms. Water is fed into the canal by a pump, reconstructed in the early 2000s by neighboring farmers after the previous Soviet built pump was destroyed during the war. These farmers have retained their control of the pump and are collectively responsible for its operation and the release of water down the canal. Despite paying for electricity to run the pump, householders in Zafar have no formal say in the delivery of water, as none possess farmland themselves.

Sitting on his front step in mid-morning, the *raisi mahalla* looked haggard. He had been up all-night diverting water from the canal to plots around their community, ensuring the water was used to its full potential. “Right now,” the *raisi mahalla* said, “we have water. But someone is working to close off our access as we speak. After five days with no water, we got water today.” The flow of water to their village is irregular and comes only after the farmers above them on the canal are satisfied that their *dehqon* plots have been sufficiently irrigated. This uncertainty has brought anxiety and crop failure to villagers in Zafar, such that anyone with the financial means has moved away.

Each time the village needs water, the *raisi mahalla* must call on two or three other community members and together they go in front of the farmers – their neighbors – pay them money for electricity and implore that water be released. “We don’t calculate the electricity fee, we just pay whatever they ask...we plead with them and tell them we have to give water to our kitchen gardens,” the *raisi mahalla* explained. Zafar has no other source of water. When their canals are dry, water must be brought in by donkey from 10 to 20 kilometers away. Barely allowing enough for drinking, there is no water to spare for their kitchen plot after these trips.

While Zafar is technically within the territory of a USAID supported WUA, neither the association, nor the *vodkhoz*, say they have the capacity to ensure water is sent to the village. Despite a lack of support in water delivery, the *raisi mahalla* says that on occasion WUA leaders have intervened on his behalf, telling the farmers they should provide Zafar with more water. However, he argues that in practice “the *dehqon* farmers don’t listen to the WUA, they don’t listen to anyone. *Dehqon* farmers have a higher status. We don’t care about a higher status, just about being normal. If we have water, that is enough for us.”

Zafar is an outlier in Tajikistan, a village that exists outside of the bounds of formal recognition. But at the heart of this story is a collection of households struggling to subsist in a region where the control of water resources has been subject to successive waves of formalization, each of which has overlooked their need for water. The challenges they now face indicate that the division of water control along the lines of land tenure produces uneven power relations, manifest in inequitable water access and declining rural wellbeing. This outcome speaks to conclusions drawn in Chapter Three, beginning where they left off.

In third chapter, I argued the construction of WUAs in Tajikistan has occurred without adequate attention to the needs of all water users resulting in the exclusion of households that do not possess farmland from full participation in associations. This has left households without a formal voice in water management decisions or a clear claim to WUAs as their irrigation water service provider. Building upon this conclusion, Chapter Four examines the effects of this institutional and practical reality in Tajikistan. To ground this discussion, I first review literature addressing the effects of exclusionary community-based natural resource management projects across the world.

Globally, scholars have documented that variations in the ability of resource users to inform and participate in the activities of community-based management organizations have produced or aggravated uneven access to needed natural resources, and in connection reinforced social and economic inequality within communities. In Tajikistan, the full effects of household exclusion from WUAs are yet unclear, as all the WUAs in Nosiri Khusrav were constructed within the last five years and thus few have brought about dramatic changes in their service territories. However, interviews with village leaders, like the *raisi mahalla* of Zafar, households, government officials and WUA staff, suggest that these organizations may bring hardship and division in the future. The present chapter argues that a failure to include all resource users in WUAs can directly reduce household access to irrigation water as well as deepen community division, by privileging particular water users. These outcomes are antithetical to the objectives of WUA creation – each undermining the notion that rural water management will be transformed to increase the equitable supply of water, the size of harvests, and food security.

4.1 Coming together and creating division

Prior to the initiation of water sector reform by development actors, most communities already have established systems of water management that exist within or outside of formal institutions. Developed over generations, these systems are usually flexible, ever adapting to changing conditions and attuned to the needs of users (Cleaver 1998; Cleaver and Elson 1995). While the presence of these more informal modes of water management may be recognized by project architects, focus remains on the formation of new institutions, where, as discussed in Chapter Three, inclusion in organizations is often strictly defined through membership criteria. The following section examines how membership stipulations can lead to the replacement of

traditional approaches or the creation of parallel processes that disrupt existing systems of water access for non-members in addition to undermining the perceived legitimacy of and their ability to exercise a claim to water. Collectively, this activity reinforces a social order whereby individuals without farmland, primarily women and the poor, are further marginalized in resource access and community decision making.

4.1.1 Access

Reflecting on her study of a Forest Management Program implemented in India in the 1990s, Agarwal (1997) highlights the irony present in many community-based projects, as membership requirements necessitate the cessation of universal resource access by all residents in the community. She notes that “unlike the old systems of communal property management where all villagers, including women, had some form of use rights by virtue of being residents of the village community, under the new formalized system of control of common property resources, rights are dependent more directly on formal membership of the emergent community institutions” (Agarwal 1997, 38). She goes on to argue the program reframed access to resources as dependent on membership rather than citizenship (Agarwal 1997) – all critiques that may equally be levied against externally imposed community-based water management organizations.

Fundamentally, membership in a community-based water management organization implies that members share in the collective control of water infrastructure, and by extension have the right to expect that their needs are accounted for in decision-making activities and their ability to access water is not unduly impeded. Formalized membership for community-based water management organizations thus inherently allows for the dispossession of other users

through the simultaneous construction of non-members who are not entitled to the aforementioned rights.

Cleaver and Diane Elson's (1995) discussion of the outcome of a development project to install a ground-water well in the Nkayi district of Zimbabwe exemplify the way in which the delineation of resource users into members and non-members, or in this case "owners" and "non-owners," may conflict with or undermine customary rights to water, denying access to users who have historically depended on water for their life or livelihood. They explain that in Nkayi, aid agencies organized households immediately surrounding the site for a planned water well to provide the labor necessary for the project, in exchange for which they would be designated the communal "owners" of the well (Cleaver and Elson 1995). These households were not, however, the only users of the well, as families residing further away also depended on the well in the times of water shortage (Cleaver and Elson 1995). Explaining that their number was equal to, if not more than, the "regular users," Cleaver and Elson (1995) note that these "occasional users" were "allowed to use the well because of a strong traditional principle that no one should be excluded from using a water source." Yet, when the community faced a drought, the "regular users" began to restrict access to the well, a right they understood themselves to possess through their designation as "owner" (Cleaver and Elson 1995). Cleaver and Elson (1995, 5) write that occasional users

"had to plead, wait until everyone else had taken to draw any residual water in the well and, if still unsuccessful, go elsewhere. The very definition of an 'owner' community meant the exclusion of others in times of scarcity, and the weakening of traditional reciprocal rights of access, critical to survival in dry lands. Those excluded from easy access to water tended to be the more marginal households who had less adequate facilities and little influence. It is ironic that success in Nkayi in achieving one of the declared policy goals of a sense of ownership and responsibility is likely to be detrimental to the avowed aim of equitable access to water for all."

The experience they documented in Nkayi highlights that the creation of formalized divisions within a user community along the lines of organizational “membership,” whereby one group’s claim to the resource is valorized over another, sets the stage for the dispossession of resource access among certain users. In the case of Nkayi, this did not happen immediately, but rather was put in motion by drought. Meinzen-Dick and Bakker (2001) note that globally, the use of water by those without formalized access rights usually goes unquestioned by rights holders when resources are abundant. But when scarcity befalls a community, “open-access or tolerated use is likely to lose out most rapidly” (Meinzen-Dick and Bakker 2001, 133) a process, which as seen in Nkayi, overwhelmingly affects residents with the least socio-economic influence.

The first to be overlooked in the design of water management organizations, community members with less wealth, either in the form of cash, land or other assets, are also generally the most reliant on informal means for water supply or delivery, meaning they are the first to lose access when this practice becomes privileged via membership. In rural areas women disproportionately fall into this category, giving the impact of exclusion a distinct gendered dimension (Ahlers and Zwarteveen 2009). Cleaver and Elson (1995, 4) reinforce this understanding, stating that it is “optimistic to assume that vesting ‘ownership’ of a water source in a community will give women equal rights over that resource and far more likely that the creation of ownership rights will confer opportunities for the rich and powerful to appropriate preferential access to the resource.”

While the tendency for poor households and women to lose access to water is found without regard to the type of formal management organization put in place, when they live within a WUA service area, this outcome largely stems from the requirement that members be “farmers,” as outlined in chapter three. When this membership stipulation is viewed in

connection with Edella Schlager and Elinor Ostrom's five categories of natural resource rights—access, withdrawal, management, exclusion and alienation—its consequence is brought into sharper focus (cited in Meinzen-Dick and Jackson 1996). Even if their right to access and withdraw water is in principle maintained, households without farmland may still lose access to water because as non-members they are not afforded a formal right to “exclusion,” namely the right to select what categories of people or individuals can access the resource, and “alienation” or the ability to sell or lease rights, and most significantly, management (Meinzen-Dick and Jackson 1996, 10). Management includes “the right to regulate use patterns...[and] define withdrawal” (Meinzen-Dick and Jackson 1996, 10). If households with only kitchen gardens are left out of discussions regarding the design of use-patterns, their needs may be discounted in the scheduling of water delivery.

Empirically affirming this outcome, Leila Harris (2005) writes that when water user groups (WUG) for farmers were formed in south eastern Turkey, water delivery was scheduled to align with the needs of WUG members, who primarily grew cotton. Meanwhile the need for household irrigation was not accounted for because the women who tended these plots were not members of the group (Harris 2005). As a result, households struggled to secure adequate water for their vegetable plots, which require water at different time-intervals than cotton (Harris 2005). In this way, the water management organization directly threatens the ability of rural households to secure adequate food and nutrition. But, she notes, “it is not only that women are excluded from user group activities, but that women, the landless and other segments of the population are codified as ‘different’, or more or less ‘appropriate’ as farmers with respect to ongoing negotiations of water user groups” (Harris 2005, 195).

4.1.2 Order

As suggested by Harris, in addition to provoking physical loss in access to water for households, WUA practices that restrict membership to farmers also hold the potential to have less tangible, but no less significant, impacts. Established without critical reflection as to how they will affect and be affected by the established social order, community-based water management organizations have the ability to reframe, reinforce, and forge divisions within communities along axes of differentiation, with gender and land tenure central among these.

By creating a “water users” association where inclusion is limited to those with farmland, farm managers are presented as the most important, if not the only, “irrigation water users” in the locale, erasing households from the irrigation landscape. This practice fortifies popular notions that “productive” water uses, being those that generate income, such as commercial agriculture and industry, take precedence over “domestic” uses of water, which are traditionally conceived to be household consumption, cleaning, food preparation, and hygiene, but may also include gardening (Cleaver and Elson 1995).²⁰ This emphasis is consistent with a neoliberalization of water governance, in which emphasis is placed on “efficient” uses of water (Harris 2009) where the “marginal returns are highest” (Ahlers and Zwartveen 2009, 413). Harris (2009, 392), citing Ahlers (2002), discusses how in Mexico, the establishment of formal water rights as a part of a broader neoliberalization of water governance in the country pushed farmers to grow “high value crops like cotton, devaluing other crops that might be more subsistence based or that might serve domestic needs.”

²⁰ I do not argue that this is an appropriate divide, but rather that it is commonly used when thinking about water resources.

The work done with “domestic” water is traditionally completed by women. As such, when formal water management organizations favor or focus exclusively on “productive” uses of water, they simultaneously delegitimize women’s claim to water and denigrate the value of their labor in the “domestic” sphere relative to that of men engaged in farm-level cultivation. This fortifies conceptions of irrigation management as a “masculine” activity, obscuring women’s role in this process. Zwarteveen (2008, 126) argues that we need to move beyond a focus on inclusion or exclusion “to explain the ‘absence’ or ‘invisibility’ of women from irrigation and politics” to consider the ways in which “hydropatriarchies” are constructed. She offers this term not to imply an inherent connection between masculinity and water, but rather to highlight the way in which diverse, culturally and historically specific social structures often lead to a connotation and configuration of water control, particularly in the case of irrigation, as male-dominated (Zwarteveen 2008). WUAs are a part of this milieu, requiring careful attention to the consequences of their design.

While the exclusion of kitchen garden irrigators from WUAs does have gendered implications, at its most basic level, those who are ineligible for membership are *households without farmland*. When a family does not have farmland, male household members frequently assist or may even be the primary cultivator of garden plots, meaning that this policy holds the potential not only to create gendered division within the community, but also along the lines of land tenure. While acknowledging the importance of understanding local gender relations, Andrea Cornwall (2003, 1326) warns that a focus on differences between men and women may become essentializing and advance an understanding of social dynamics as “woman-as-victim” and “man-as-problem.” Variations in class, education, wealth, and the location of households as upstream or downstream cut across categories of “men” and “women,” and lead to differing

water resource priorities between individuals of the same gender (Sultana 2009; Meinzen-Dick and Zwarteveen 1998; Bruns 2007). This reaffirms what Sultana calls the “myth of female solidarity” (2009, 349). If other axes of differentiation are not accounted for, only women who are of elite status may be included in water management projects, which could institutionalize the exclusion of poor women from decision making bodies (Sultana 2009). The same scenario is equally likely to affect men.

In her analysis of the impacts of water user groups in Turkey, Harris (2005) signals the importance of attending to both gender and access to farmland. To be a member of these groups, one must have a land holding of four or more hectares (Harris 2005). She highlights that this policy leaves women disproportionately underrepresented in user groups, as few have formal land titles (Harris 2005). Group members are thus overwhelmingly men; but also landed and by extension, elite. She calculates that with very high rates of landlessness in the area, an estimated “70 percent of the adult population is barred from meaningful participation,” even though many still rely on water provided by the group for their life or livelihood (Harris 2005, 192). A policy limiting membership to households with farmland reinforces their elite status in the community, leaving the majority of the population marginalized not only with regard to water access, as described above, but also with regard to information.

With a significant proportion of both men and women in the community precluded from formally engaging in organization activities, access to information becomes uneven as those with farm land are, in theory, provided opportunities to learn about the technical and administrative procedures governing water, while those without farmland or women are left to independently seek out this information. Regardless of their membership status, WUAs depend on the cooperation of all those who draw water from canals to respect agreed upon practices for water

withdrawal, fee payment, and maintenance and inequity in information access can threaten the WUAs ability to engage effectively with the community at large. Goldin (2010) highlights how this inequity in information access can subvert the existence of mutual trust within a group – the foundation upon which community-based natural resource management organizations are built (2010). She writes:

Knowledge is a pillar for participation and poor people are unable to take control over their environment and to participate in decisions to improve the quality of their lives without knowledge about the resources on which they depend. The absence of knowledge, the unequal power relationships between water users, and the inhibition of agency, frustrate the process of participation because the production of trust is inhibited and feelings of shame, that aggravate issues of social exclusion and negate social agency, are activated (Goldin 2010, 197).

For example, Goldin (2010) recounts how one rural water user she spoke with in South Africa was unfamiliar with the concepts and terminology used in discussions of integrated water resource management. Paralyzed by the threat of shame or ridicule from his lack of knowledge, he remained silent and was unable to substantively engage in decision making processes regarding water use (Goldin 2010). The connection between unequal access to information, shame, and silence operates in a “vicious cycle” (Goldin 2010, 204), that extends beyond the sphere of the organization and resource use to strengthen the hold of elite groups on information and perpetuate the exclusion of poor or marginalized populations in society more broadly.

Quoted by Goldin (2010, 208), the rural water user states,

“shame is about being hungry. I know shame, when I am inside the committee I will just say yes until I learn and they will not know how poor or ignorant I am. It is a terrible thing when you feel hollow inside. Hunger can make you feel this and not knowing anything can make you feel this.”

His quote highlights the irony that an organization established to increase water access and crop yields can in fact produce hunger – both physically, as seen in the proceeding section when

access to water is curtailed, and intellectually, when access to information is unevenly distributed.

4.2 “Water for [the] life [of farmers]”

In 2005, the government of the Republic of Tajikistan worked in collaboration with the United Nations to launch the International Decade ‘Water for Life,’ in a bid to attract support for water management reform globally and within its own borders. The culmination of this decade was a high-level international conference in the capital city Dushanbe in June 2015 and colorful billboards marking the occasion could still be seen in the summer of 2017. While it was intended to embody the ethos of water sector development in the country from 2000 to 2015, when the phrase ‘water for life’ is viewed in the context of WUA membership policies it begs a correction. For rural residents living within the territory of a WUA, the phrase would more accurately read ‘water for the life of farmers’ – in both a literal and rhetorical sense.

In the previous chapter, I established that legally and in practice, households without farmland are effectively excluded from WUA membership. The following section elaborates on this outcome, examining how household access to water may be curtailed because of non-membership and how this represents a threat to the food production capacity of a majority of rural households. Beyond materially reducing household water access, the process of delineating the community into WUA members and non-members on the basis of farmland possession suggests a hierarchy of water use, where farm-level irrigation is placed above kitchen garden irrigation. In this way, WUAs also may serve to re-shape collective understandings of the legitimacy of different water-uses, privileging water access and withdrawal for “productive” uses of water, over “domestic” uses of water like kitchen garden cultivation. The second half of the

section examines this immaterial effect of WUA exclusion, and the way in which a hierarchy of water use reinforces a social hierarchy whereby women and households without farmland are marginalized.

4.2.1 “They do not give water to the village”

WUAs in Tajikistan are relatively new, established within the last two decades. USAID supported WUAs were constructed even more recently, with all those in Nosiri Khusrav created in 2013 and 2014. WUA leaders in Nosiri Khusrav felt their organizations still have a long way to go before they are fully functional, a sentiment echoed by interviewees, few of whom noted dramatic changes in their water availability. Currently, the exclusionary nature of membership policies does not appear to be the locus of significant challenges for rural households. However, the sub-section below questions the extent to which this outcome is temporary and subject to change as both the intensity of WUA involvement in irrigation water management and overall climatic aridity and population density increase with time.

Van Houweling and colleagues (2016) warn that the control of community-based water management organizations by elites, which may include those who possess farmland, frequently leads to preferential water access for specific crops. This occurs because globally, commercial farmers tend to cultivate a limited number of high-value crops. If resource management is conducted on the basis of servicing cash crops, it is unlikely to satisfy the needs of households as the water delivery requirement for the diverse crop cultivation that characterizes kitchen garden agriculture differs dramatically from that of specialized commercial cultivation. We can see this process at work in Nosiri Khusrav, as water delivery for commercial cotton and rice is privileged, to the detriment of kitchen garden cultivation.

In Tajikistan, and Central Asia more broadly, the end of winter and coming of spring is marked by the New Year festival of *Navruz*. Held around mid-March, this festival corresponds with the start of the irrigation season for both households and *dehqon* farms. From this point, water is expected to flow through the canals until November, at which time they are closed for the remainder of the winter. While frigid temperatures preclude most cultivation at this time, household need for water during this period continues. In the village of Guliston, women noted that they try to grow potatoes starting in January and wheat during the winter, but often struggle to get enough water for their plants from the rain alone. A lack of water in their *joibor* from November to March, brings further stress for women in this village as it means they are without a source of water for drinking, cleaning, and giving to their animals. During early spring and late fall, most families felt they were able to access adequate water for their kitchen gardens and household needs, but between these two periods reports of challenges were common. Households in Nosiri Khusrav consistently described water shortages during May, June, July, August, and into September – a phenomenon they attributed directly to increased demands on the water supply by *dehqon* farms during this time.

As discussed in Chapter Two, *dehqon* farms in Nosiri Khusrav principally grow cotton. Planted in March, the most critical period for irrigating cotton in Tajikistan fall between May and August.

“Now [summer] is really tough for us. It’s the most difficult right now because the cotton is flowering. If we don’t give them water on time, they fall off and the whole harvest will just fall away,” a *dehqon*



Photograph 12: Farmer in a cotton field in Khatlon Province, Tajikistan. Photo by author.

farmer in the village of Navobod explained. When asked if households ever ask him, as a *dehqon* farmer, to release more water to the village during this time, he replied

“Yes, this happened a lot, but not recently. [To solve it], we go before the water organization [WUA] because they have an office here. After talking with them...we say alright, one week, one time it is necessary for us to give water to the community... In the night, poor people [villagers], we give them water...but just two or three people take the water and the rest just have to stay [without]. They fight and mobilize to try get water. I think we don't give them enough. But until it is like the past [in the Soviet Union], when the pump worked, there will be a lot of difficulties. The poor households, those people with kitchen gardens, it is really difficult for them. But giving water to *dehqon* farms is ultimately more important because we have to irrigate a lot of hectares of land and we sign contracts and give cotton and other products. We have made an agreement and if we don't do this [turn over harvest] they²¹ will put us in debt, so the first turn should be *dehqon* farms.”

As indicated by his response, during the summer irrigation water is used first and foremost for farm-level cotton cultivation, an understanding mirrored by households in Navobod and throughout Nosiri Khusrav. “The *dehqon* farmers take water and they do not give water to the village,” one woman in Navobod said, “The people [in the village] pay the tax [water fee paid to the *vodkhoz*] but we don't have water...[when our crops dry up, we have to] buy food.

Sometimes we work in Russia to earn money, no one works for the government or gets a salary. We do work for the *dehqon* farmers, but we just get cotton stalks (to burn as fuel) and for picking cotton we get just 40 Tajik diram per kilo (approximately 4.5 US cents).” Her neighbor confirmed this practice, expressing similar frustration that households contribute both monetarily and in labor to the upkeep of the irrigation system yet see less benefit. “The people do not have as much rights as them,” she explained. “During the day, four *dehqons* [from their village] take

²¹ “They” in this sentence likely refers to “futures companies.” In Tajikistan, farmers usually access the inputs needed for cotton cultivation by signing agreements with “futures companies,” which provide seeds, fertilizers, and pesticides in exchange for a commitment from the farmer to sell the cotton back to them at a fixed price. Many farmers feel the price set by these companies is too low, but do not have any other option to secure inputs, as they lack the upfront capital. If the amount of cotton harvested is not enough to cover the cost of the inputs provided by the company, farmers will be put into debt.

the water, they don't give us any. Both then when it's time to clean the *joibor*, only one person from the *dehqon* farms comes. But the villagers, they all come." She noted that the villagers don't say anything to the *dehqon* farms anymore about their water use, as they know the farmers will just say "we have cotton, we give the cotton [to the government], so we take the water." Affirming her conclusion, a *dehqon* farm manager in the village of Guliston stated, "when water is scarce, *dehqon* farms should get it first because they have cotton. Cotton is the wealth of the nation, we grow cotton for this reason." As additional pressure is placed on sources of irrigation water due to increasing aridity and rising summer temperatures, household water access may become further sidelined, their needs superseded not only by the logic of national wellbeing, but now, by farmers' rights to water as dues-paying WUA members entitled to adequate irrigation.

While cotton dominates farm-level agriculture, the cultivation of wheat, rice, and melon is also common. Among these crops, rice stands out as particularly water intensive and a number of households identified this crop as drawing an inordinate amount of water



Photograph 13: Rice paddies in Khatlon Province, Tajikistan. Photo by author.

from canals. In the village of Faizobod, one household noted that they struggle to keep cultivation of their kitchen plot on schedule, as their budding crops dry up when water is taken from the canals to service rice paddies in March and April. Exasperated with inequity in water division, a woman from Novobod said that "farms and households should have an equal right to water, as they all have to survive," but unfortunately this is not the reality. At a bare minimum, householders in the village of Faizobod voiced that they need enough water to keep the trees

planted in their gardens alive. Life in the hot, dusty plains of Nosiri Khsurav without the shade and protection of trees is unthinkable.

As *dehqon* farm managers are currently the only rural residents eligible for membership in WUAs, a hierarchy of water use that favors farm-level cotton and rice cultivation over household cultivation is unlikely to change over time. Rather, as WUAs become more active and gain better technical control of the process of water delivery through the repair of canal systems and water gates, the position of kitchen garden irrigation as of secondary consideration is likely to become ingrained in association practice, translating to inferior water access.

Differentiated temporally throughout the year, farm and household access to water also differs across the span of 24 hours. Throughout Nosiri Khusrav, farms are overwhelmingly provided water during the day, while water is sent down village canals at night. A woman in the village of Navobod relayed that, “water flows down the canal and until six o’clock the *dehqons* take water, and after six the people [receive water], but how can women go out at six in the evening and get water?” As male-out migration is common among rural households, the gendered impact of evening and night time water distribution is a significant consideration. The chairman of WUA 3 said that this arrangement does not present any difficulties for households in his area. “We watch over them, and if their husbands are not there we give them water in the daytime. If they are a laborer we also give it to them in the day, if they are a boss with workers we give it to them in the night,” he explained. The logistical potential of such distribution aside, a farmer in his territory I met later in the day noted that he had been up all night irrigating his plot, as he preferred to distribute water when it was cooler to minimize evaporation. These lends one to question whether or not households can truly access water during their allotted time.

In response to persistent challenges in household water access, one *raisi mahalla* took it upon himself to try to develop a schedule that meets the needs of kitchen gardens and *dehqon* farms. In the village of Sebiston, the *raisi mahalla* explained that because of the way the canal is structured, water flows first to *dehqon* farms and then onto the village, at which point there is little water left to go around. Contacting local officials, he was told that there simply is not enough water for both the farms and the village, so he set about trying to equalize distribution, making a schedule whereby water would flow to farms for three days and then three days to the village. But, after working to implement this system for three years he has given up hope, as erratic water flow down the canal prevents a regular trade-off between farms and households. All that is left he explained, is to raise the money to construct a borehole well for the village.

4.2.2 “The voices of the household mean nothing”

“In the Soviet Union, there was one *rais* (leader), now they are everywhere!” explained a woman from Bahoriston with a laugh. Her statement references the shift that occurred with land reform, as the area surrounding her village transitioned from being managed by one man, the head of a large collective farm, to being managed by hundreds of *dehqon* farmers, each tending to smaller farm plots. Farm managers, particularly those engaged in cotton cultivation, commanded significant respect during the Soviet Union, and reverence for the position has carried on into the post-independence period. Yet, as the position has changed from being held by one individual across many villages to now being held by many individuals within each village, ingrained attitudes that farm managers inherently hold a privileged social status has created challenges for water management. Zebo, the head of a water users’ department within a Land Reclamation and Irrigation Authority, explained that at times she struggles to work with

dehqon farmers because they see themselves as exceptional and not bound by irrigation policies established. She tells all her employees not to call them *rais*, but instead use the polite term for older brother (*aka*) or older sister (*apa*) so they can begin discussions on more equal footing. Affirming the rationale behind this practice, the engineer of the WUA 5 explained that a belief in the primacy of *dehqon* farmers over other cultivators and community members has manifest in a social hierarchy.

“People do not know enough. In their minds the *dehqon* farmers are above everyone. People don’t know the law [Water Code], if they knew the law, they would see that day, night, whatever the difference between *dehqon* farms and kitchen gardens, they have the same rights....There is no law that says *dehqon* farmers are have a higher status. They should have in the same position [as kitchen gardens]. [But] the *dehqon* farmers think this way, and the households with kitchen gardens also think this way, that they are lower and the *dehqon* farmers are higher.”

His claim is evidenced by households’ perceptions of local power relations, as almost all the villagers I spoke with felt that the voices of *dehqon* farmers command greater respect. “Here,” a woman from the village of Zafar explained, “the voices of the household mean nothing. They [*dehqon* farmers] grow cotton and watermelons. They are rich, so their rights are given more importance than ours.” The role of wealth, be it in the form of cash or land, in informing the social status of *dehqon* farmers and in relation, households, was frequently referenced by interviewees. For example, another woman from Zafar commented,

“you can’t say anything about it [inequity of water access]. Right now, is the era of the wealthy, if you have money, you can speak....We came here because we have five children and there was not enough room in the house of my husband’s parents. But here, there is no water, no school, no doctor, no one asks after your condition, no one asks how you are doing. Here, there is just the flies that bite at our faces.”

As seen earlier in regard to water access, many households rejected the notion that the secondary concern given their plots by water management officials was natural or inherent. Challenging

what he feels is the dominant approach to assigning value to the two plots, a man from the village of Bahoriston stated, “*dehqon* farms have a higher position in our area, but kitchen gardens should be higher, because on these ten *sotiq* [one *sotiq* is equal to .01 hectares] you can grow everything. On the *dehqon* farms it is just onions and cotton. On the kitchen garden everything is grown, vegetables, fruit trees--these are essential to life.”

Acknowledging the uneven power dynamics at work in this area, a young man from the same village who cultivates a kitchen garden in addition to acting as a *mirob* (local water manager responsible for opening and closing canal gates and

ensuring scheduled water delivery) explained that that “I provide kitchen gardens with irrigation assistance first, because *dehqon* farms have money, they have other opportunities. They can easily access water themselves. I give water to the kitchen gardens first, but in general, [for others], the claims of *dehqon* farms receive priority.” While individual WUA leaders or staff like this man may choose to actively counter the social privilege afforded to *dehqon* farm owners, by formally dividing the community into members and non-members based on the possession of farmland WUAs as a whole discursively affirm the prestige of *dehqon* crop cultivation relative to kitchen garden cultivation.

Analyses of the effects of community-based water management organizations globally that prioritize “productive” or commercial farming over “domestic” production, suggest that similar messaging from WUAs in Tajikistan is likely to have extenuating implications for gender relations. Specifically, by denigrating the value of women’s labor in household cultivation and



Photograph 14: Apricots from a kitchen garden are laid out underneath household grape vines, which are hung with garlic bulbs harvested several weeks before in Khatlon Province, Tajikistan. Photo by author.

reinforcing conceptions of water control as masculine, WUAs may ultimately undermine women’s ability to advance their interests in water management processes. In Tajikistan, both women and men may work on farms as well as kitchen gardens, and indeed, women have taken on significant responsibility for the cultivation of farm plots in response to widespread male outmigration. Nevertheless, kitchen gardens possess a historical and cultural association with women, in part as a result of their location in “domestic space.” Homes in Tajikistan are generally located within a walled



Photograph 15 (above): A woman and her daughter pull potatoes from their kitchen garden in Khatlon Province, Tajikistan. Photo by author. Photograph 16 (below): A woman stands with her children in front of their kitchen garden where they grow corn, tomatoes, squash, beans, eggplant, peppers, melon, herbs, peanuts, grapes, walnuts, apricots, and sour cherries in Khatlon Province, Tajikistan. Photo by author.



compound, with kitchen gardens situated in the center of this structure. Throughout the late 1800s and into the 1900s, “women were discouraged from leaving their homes” (Harris 2004, 137). Recalling the gendered division of agricultural labor during her childhood, a woman named Karomat, voiced that “the women worked on their own homesteads, looking after vegetable gardens and fruit trees, tending the livestock that lived near the house and carrying out domestic tasks, but not working in the fields. That was men’s work” (Harris 2004, 56).

With collectivization, this division was, to some extent, disrupted, as women were forced to move visibly into public space and work on collective and state farms (Harris 2004). This process coincided with unveiling policies in the 1930s (Harris 2004). Being forced, in many cases against their will, to publicly ‘abandon their seclusion’ was a traumatic and emotional experience for many women (Harris 2004). Collette Harris notes that “casting off the veil did not always result in greater freedom for women, but could instead make it more difficult for them to leave home at all.... Insistence on maintaining traditional gender norms continued throughout the Soviet period in Tajikistan and was at the center of resistance to Sovietisation” (2004, 58). Today, while women’s mobility has increased, conservative values are still very present in rural areas and advance ideals that women should remain in the home, where they are expected to cultivate a kitchen garden. Due to an engrained connection between women and kitchen garden cultivation, by officially extending membership eligibility to *dehqon* farms and not households, WUAs inadvertently signal that the value of women’s work in kitchen garden cultivation is of less significance, reinforcing patriarchal gender norms.

During the Soviet period the management and application of irrigation water was traditionally completed by men, while women were responsible for tasks of lesser technical skill, including weeding or harvesting crops by hand (Mukhamedova and Wegerich 2014). Scholars indicate that this general division of labor is still present (Tandon 2011). But, as a result of the outmigration of men from rural areas and increased responsibility of women in agriculture, women in rural communities are taking on a more active role in irrigation water management (see Mukhamedova and Wegerich 2014). While many rural women I have spoken with in Tajikistan are more apt to characterize their engagement with this agricultural activity as a burden rather than an opportunity because of the physical toll and time it extracts, they

nevertheless saw their ability to work effectively in this area as a necessity. However, as this task has historically been performed by male household members, many women felt they lacked the technical knowledge of water system operations and administration to do so. As less than 15 percent of women in Tajikistan are officially listed as managers of *dehqon* farms,²² and thus may formally participate in the WUA, the vast majority of rural women are left without the opportunity to join in the shared learning and networking that is thought to follow from active engagement with collectively held resource management institutions. In effect, knowledge of the irrigation system, and by extension, the ability to change when and where water flows thus becomes concentrated in an elite, male segment of the rural communities, reifying a social hierarchy that marginalizes poor households and women's control of natural resources. This outcome is a diametrically opposed to the inclusive decision-making that WUAs were intended to advance.

²² There is evidence that even among female farm managers, who are official WUA members, active engagement in WUA activities such as meetings, is low. Sultana (2009) highlights that there is an assumption that if an individual is officially eligible for membership in a community-based water management organization, they will readily become active participants in the group. However, even if formal membership requirements allow entry, these institutions may still embody social or cultural norms that effectively exclude or marginalize individuals, challenging their ability to engage in organization activities by conventional means (Cleverly 1999). Scholars have noted that women are most frequently subject to this experience (Agarwal 2001; Meinzen-Dick and Zwarteveen 1998; Sultana 2009). Meinzen-Dick and Zwarteveen (1998, 340) refer to social norms relating to gender as “informal membership criteria” for community-based water management organizations. The effects of these ‘criteria’ are evident in Tajikistan, as a USAID survey found that out of 12,934 farming households, just 7% reported female members of WUAs – well below the estimated 13% of female headed farms in Tajikistan (Family Farming Program Staff 2014). Estimating an even lower rate of participation, the Asian Development Bank reported a USAID statistic that out of 840 women surveyed, only 1 was involved in any capacity with a WUA (2016). They concluded that in Tajikistan “Rural women’s participation in community-based water management is not proportionate to their burden of livelihood maintenance, the rising trend of female-headed households, or their direct interest in improving water provision” (Asian Development Bank 2016). Agarwal (2001) identifies three main restrictive social norms that can exclude women from participatory institutions—the gendered segregation of public space; gendered division of labor; and gendered behavioral norms—each of which can be seen at work in the case of WUAs in Tajikistan, though a full discussion of these dynamics is beyond the scope of this thesis.

Conclusion

As non-members, households are quite literally without a “seat at the table” when decisions are made regarding water scheduling by the WUA. This leaves their ability to access water, and their chances of a successful harvest tenuous and dependent on the consideration of farmers within their community. The logical basis for community-based natural resource management may suggest that this is not a significant concern, as mutual understanding and shared interests within the community will assure that resource distribution satisfies the needs of all users. This chapter challenges this notion, highlighting how stratification within a community can inform the distribution of power within that group, with significant bearing on an individual’s water needs and their ability to access and use water as desired.

Households across Nosiri Khusrav noted that when water is in high demand, their access to it is disproportionately reduced, the flow directed instead to the fields of *dehqon* farm sown with cotton and rice. This practice is grounded in a widespread perception of these crops, and commercial cultivation more generally, as playing a more significant role in the promotion of national interest than the vegetable and fruit cultivation that takes place on kitchen plots. By limiting WUA membership to *dehqon* farm managers, these associations thus reinforce the primacy of commercial cultivation relative to domestic cultivation, both in practice and rhetorically.

Control of local irrigation water management has been vested in *dehqon* farmers via their exclusive ability to become members of the WUA. As such, practices in this arena, including the scheduling of water delivery are likely to become more closely attuned to the needs of farm plots, and specific crops like cotton. The water requirements of kitchen garden cultivation differ considerably from those of *dehqon* farms, meaning the emergence or aggravation of challenges

in accessing adequate water for households is probable. Reduced access to irrigation will have negative effects on the productivity of kitchen gardens. This result is the opposite of the outcomes anticipated by USAID, who expected WUAs to create increased harvests and food accessibility among rural populations. With climate change projected to bring increased aridity to the region, water shortages are likely to be experienced regardless of plot type. Yet the ability of households to rely on WUA support in coping with these events is similarly deterred by their status as non-members, which prevents them from engaging in and learning from WUA activities and delegitimizes their claim to water relative to that of *dehqon* farms. In this way, the possession of membership has the potential to widen cleavages in society, as individuals with farmland are afforded increased authority in the command of community affairs and opportunities to advance their lives through their formal engagement in the WUA, while those without farmland are subject to increased marginalization. Instead of subverting the existing social order to increase the equity of water delivery and accessibility and support the cultivation of food crops among food insecure households, WUAs thus reinforce a social order that favors elite male farmers and valorizes the cultivation of commodities like cotton, rather than valuing the potential of kitchen gardens to feed communities. This dynamic is not, however, inevitable, as national legislation, WUAs, and communities are not themselves static and remain open to change.

Chapter Five

Conclusion



Photograph 17: Sign in Nosiri Khusrav District, Khatlon Province, Tajikistan notifying residents of the International Decade for Action: Water for Sustainable Development 2018-2028. Photo by author.

Introduction

Cornwall (2003, 1328) writes, “the question of who participates and who benefits raises awkward questions for participatory development. The very projects that appear so transformative can turn out to be supportive of a status quo that is highly inequitable.” This thesis exemplifies Cornwall’s statement – raising the question of who can participate in the WUAs constructed by development actors in Tajikistan and finding that despite the initiative’s intent to create inclusive institutions that make decisions on the basis of all water users’ needs, it privileged the voice and water requirements of *dehqon* farmers over household gardeners.

This argument was established in the preceding four chapters, the first of which laid out the core research question described above and elaborated on the qualitative methods used to collect the data that informed this thesis. This was followed by a review of the conceptual origins

of WUAs, locating them within a global shift in development theory away from state-centric natural resource management and toward local, community-based control in the later part of the 1990s. As the dust settled from this shift and participatory projects became the new normal for international development in the 1990s, the Soviet Union collapsed, opening Tajikistan to the influence of multilateral and bilateral development agencies like the World Bank and USAID. In the years immediately following independence, abrupt cuts in available financial resources, the outbreak of a violent civil war, and the decollectivization of farmland left the government of Tajikistan struggling to effectively manage irrigation systems and ensure adequate water delivery. The toll inadequate water access was taking on the economy and health of this agriculture-dependent nation, prompted international development organizations to advocate for the decentralization of state-water control through the introduction of WUAs. WUAs were not only expected to improve the maintenance and operation of irrigation systems, but also minimize overhead costs, increase fee recovery and the equity of water delivery, and operate as a space for the exchange of knowledge and resolution of shared concerns. However, in Chapter Three I argue that that the design of WUAs is such that only community members who possess farmland can be members. This membership requirement is articulated in national law and is reinforced through the general inaction of those in positions of authority, namely government officials, USAID representatives, and WUA leaders, in facilitating the incorporation of households as association members. In practice, this leaves households without a formal voice in decisions made regarding local irrigation management, claim to the WUA as their water service provider, or avenue through which to seek support in redressing grievances. In Chapter Four, I discuss the implications of this exclusion, arguing that it threatens household access to water, as the scheduling of water delivery and ordering of access is set to benefit *dehqon* farmers. Moreover,

this policy holds the potential to exacerbate cleavages in society along the lines of land tenure, and in connection wealth and gender, as *dehqon* farm crop cultivation, an activity that is pursued by a minority of the rural population, is valorized over kitchen garden cultivation, which is largely the responsibility of women. With this, the core objective of WUA creation is undermined, as food access and community cohesion may decrease rather than increase.

5.1 “Water for Sustainable Development During the Years of 2018-2018”

After spearheading the UN declaration of an International Decade ‘Water for Life’ in 2005, the government of Tajikistan has continued to publicly promote water reform. Billboards in the capital now declare 2018 to 2028 to be the decade of “Water for Sustainable Development.” Moving south from the capital, signs advertising this coming



Photograph 18: A billboard in the capital city of Tajikistan, Dushanbe, that says "Water for Sustainable Development During the Years of 2018-2018." Encouraging a different sort of development, the letters beneath read "a place for your advertisement!" Photo by author.

reform line the roads, though juxtaposed with the agricultural land behind them, they take on new significance. As you enter Tajikistan’s most southwestern district, Nosiri Khusrav, an announcement for the initiative is painted in red letters on a whitewashed cement block (see Photograph 17). The message stands out against the surrounding landscape where hills, once green with Soviet cotton plantations, stand bare; the dusty earth punctuated only by cracked remnants of irrigation canals and patches of white, highly saline soil.

The type of development these next ten years of water reform will bring is yet unclear, but I argue here that a shift in the structure of WUAs to become more inclusive and effective institutions is possible if WUA leaders are adequately supported by government and development partners in overcoming legal and logistical barriers to household incorporation. In working towards the restructuring of the WUA to include households as members, WUA leaders should work closely with *raisi mahallas* and village residents, soliciting continuous feedback in order to more effectively meet the needs of *all* water users, and by extension the nutritional needs of *all* families.

In building a more inclusive organization constant collaboration will be essential, as authorizing and implementing household membership in WUAs will not ensure that all kitchen garden managers are able to fully engage in organizational activities or receive adequate water. Social hierarchies persist regardless of legal doctrine. This is highlighted by Cleaver and Elson (1995, 7), who write that

“there is an assumption in much of the literature that the community is a philanthropic social entity concerned with ensuring distributional equity amongst its members. In fact, it is clear that many communities are based on strong principles of hierarchy. Access to and distribution of resources are dependent on the place occupied in the hierarchy. Indeed, it has been suggested that certain people have been pre-selected within social structures not to receive equal access to such resources.”

Those “pre-selected” for unequal access often include women and the poor, meaning that despite their ability to become formal members, they may continue to face challenges in gaining adequate access to water. It is here that issues of informal exclusion come into play, as meeting times or places, forms of engagement, the nature of activities, required contributions of money or labor, etc., can all effectively prohibit certain groups or individuals from actively participating in association decision making regarding water management and delivery (see Agarwal 2001).

Recognition of this complexity requires what Lyla Mehta and colleagues (2001, 5) refer to as a “questioning of the managerialist approach” to designing natural resource management organizations. Instead, they argue that

“with the acknowledgement of uncertainty and complexity as the starting point, a much more nuanced approach emerges; one where institutions are viewed as inextricably linked with people’s cultures, beliefs and life-world. In this view, institutions are then seen as social practices and sites of ongoing negotiations, imbued with power relations.”

In a similar vein, Ahluwalia (1997) advocates that attentiveness to diversity within a locality does not preclude the establishment of participatory water management organizations, but rather informs a management structure that is more responsive to the needs of all community members.

She states that

“having established that it is important to recognize complexity, it should be added that if each combination of multiple social attributes is treated as a single type of stakeholder, the latter become innumerable. A balance in such analysis must thus be struck between generality and complexity according to the needs of each local situation and its power politics” (Ahluwalia 1997, 32).

It is towards this balance that I hope those involved in WUA construction in Tajikistan move. Though fraught with challenges, “development,” in the sense of activities that are rooted in an intention to mitigate the existence of hardship, cannot, and indeed should not be abandoned in Tajikistan. But neither can development remain as it is if we are to take concerns about equity seriously. As seen by this thesis, it is in the moment where intention is translated into action through program design that projects often go astray and lead to exclusionary outcomes. As such, it is also this moment where they should be rethought with the complexity of social relations and resource use in mind. To some extent this is already occurring.

While not discussed in the context of WUAs, the inadequacies of management practices and infrastructure designed for single-uses of water are now increasingly acknowledged in scholarship. Case studies have illustrated that the use of irrigation water for multiple-uses is “not only a reality but also bring[s] additional health and hygiene benefits through using irrigation systems for domestic



Photograph 19: Women collect drinking water from an irrigation canal in Khatlon Province, Tajikistan, while a young girl baths in the water. Photo by author.

uses and additional benefits to livelihoods from the productive use of domestic water systems” (Smits et al. 2010, 102-103). Recognition of the widespread use of irrigation water for domestic purposes has led some scholars to advocate for a “multiple-use services” approach to rural water management, which is grounded in an understanding of the dynamic ways that communities use single sources of water (Smits et al. 2010; Hall et al. 2014). However, the application of this approach has been limited. Stef Smits and colleagues (2010, 103) write that “although such de facto multiple-use of services is fairly widespread and obvious, this practice is at best ignored, and more often discouraged or prohibited by agencies and operational staff of water agencies.”

These sentiments are echoed in a 2014 article by Ralph Hall and colleagues. They state

“water projects typically supply water for a single use – such as domestic use or irrigation—while people use water for all their needs. Regulations or policies often try to forbid non-planned uses, or even declare these uses illegal... These non-planned uses reflect people’s norms and priorities and meet basic livelihood needs. They realize a range of human rights” (Hall et al. 2014, 859).

Taking Hall’s quote and the argument of this thesis to heart requires shifting contemporary practices surrounding WUA design in Tajikistan to account for the multiple-uses

of irrigation water in rural areas. This is no small task. Indeed, Ruth Meinzen-Dick and Margaretha Bakker (2001, 144) write that “recognizing that irrigation systems supply water for more than field crops complicates our analytic and practical approaches to water allocation in a number of ways.” Nevertheless, such work is essential to the practice of developing or supporting rural water management systems that are truly responsive to the needs of all community members, support local food security and strengthen the capacity of communities to collective work towards the resolution of challenges.

5.2 Moving forward

Interviewing as a methodological tool can illicit rich insight into the way that agricultural initiatives or practices are understood and experienced by rural communities, with thoughts exchanged between the researcher and respondent in the moment, continuously sparking ideas and anecdotes. However, the momentary nature of interviews can also pose a limitation. Researchers, myself included, who study agricultural cultivation often call upon respondents to think back over a season or multiple years to recall specific practices, such as crop types grown, the size of harvests, the amount paid for water, the number of times water was applied, or specific events, such as the timing and circumstances of a water shortage or topics discussed in a group meeting. This can prove a difficult or frustrating experience for interviewees and can hamper the construction of a detailed understanding of the obstacles to water delivery, access, or application. Interactions with natural resources do not generally occur in defined moments that can easily be recounted in the space of an interview, but rather occur on a daily basis, woven into the fabric of both rural and urban life.

In light of this, I hope to advance my research methodologically, moving beyond interviewing respondents at disparate moments to incorporate data collection techniques that can better capture the everyday engagements of individuals with natural resources in the context of agriculture. For example, Grace Goodell worked to highlight the impacts of high-yielding rice varieties on rural communities in the Philippines by collaborating with a farmer who recorded diary entries of his financial transactions, agricultural practices, and crop observations for seven years, synthesizing and analyzing his experiences before putting them into a published format (1984). While this method has the obvious challenges of requiring respondents to be literate and willing to invest significant time in the project, I appreciate its attempt to more effectively turn information into tools that improve accountability in the sphere of development.

Indeed, the need for such efforts continue as despite decades of critique “participatory” natural resource management remains a prominent practice among international development agencies and organizations, though it may take on new titles and strategies in its deployment. For example, Perreault (2015) identifies the recent push for “consultative mechanisms” that ensure communities connected to mining operations have their voices heard and receive free, prior, and informed consent as a product of the movement during the latter half of the twentieth century to increase the involvement of local populations in development project design and implementation. Just as the practices advanced by this movement continue to manifest in development projects, so too do the problems with which they are associated, including exclusion. Perreault (2015, 437) writes “as with participation, consultative forums hold the promise of more democratic forms of development.... Unsurprisingly, however, this promise is rarely fulfilled and is easily subverted.” Perreault’s observations signal that while the lexicon of different “theories of change” may fall out of popular use that does not mean their influence similarly disappears. It is

with this in mind that I return to Harris, who argues for the need to remain attentive to the diverse ways that “participatory” processes may be used to advance neoliberal agendas with regard to natural resource management and use. She writes that even though there has been considerable work done by scholars to connect “theories of neoliberalism to ‘nature’ and resource issues...analyses of more sites, especially from the global South...remain urgently needed” (Harris 2009, 390).

Early on in the process of designing this thesis project, I was told by another scholar that “there is nothing new to say about participatory development.” But I find that this comment is shortsighted. It is true that the critiques of participatory development are well established, yet despite such critiques this approach is still pursued by different actors, as highlighted by Perreault, Harris, and this thesis as a whole. As participatory development, either through new initiatives or the legacy of past projects, continues to impact communities globally, the practice demands continued attention from scholars. Without vigilance to the variegated effects of participatory or community-based projects, the research produced by academics on natural resource management supports rather than disrupts the “papering over” of difference within communities by development actors. As a research assistant for IWMI in Tajikistan, I felt, at times, complicit in this “papering over” as I literally contributed to the drafting of papers on the impact of WUAs on food security, that nevertheless failed to attend to the place of kitchen gardens within the structure of these associations and sidestepped questions of social power. This thesis marks a first step in looking beyond these “papers” and project reports, returning back to the people who wrote them and the “beneficiaries” whose lives and experiences were supposed to have informed them.

Specifically, through my research I sought to examine how the legacy of the participatory development boom in the late 1900s and its concomitant adoption by neoliberal institutions led agencies like USAID to advance the creation of WUAs in Tajikistan. I also aimed to highlight how the design and operation of these associations affected the water access of different water users, specifically households that irrigate kitchen gardens. This process took an unexpected twist as it became clear that not only were household water needs not adequately considered in project design, operation, and implementation, but that this omission undermines the core objective of the initiative, improved household access to nutritious food. It is my hope that these findings assist in holding development actors in Tajikistan accountable for the effects of their initiatives, in this case, the way that a rewriting of the management of local irrigation now threatens the ability of households to lay claim to water resources and cultivate food needed to subsist.

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Education

Syracuse University

September 2016-May 2018

- Master of Arts, Geography
- Thesis: “When Our Crops Burn, We Burn”: Household Cultivation, Inattention and Exclusion in Tajikistan's Water Management Reform
- Advisor: Dr. Tom Perreault, Professor and Director of Graduate Studies, Department of Geography, Syracuse University

University of Washington

September 2010-June 2014

- Bachelor of Arts, International Studies
- Bachelor of Arts, Near Eastern Languages and Civilizations
- Magna Cum Laude
- Member of University and College Honors Program

Research Papers

- Balasubramanya, Soumya; Marie-Charlotte Buisson; Sohrob Aslamy; Katherine MacDonald; Panchali Saikia; Archisman Mitra. 2016. “*Creating water user associations for improved agricultural productivity in Tajikistan: opportunities and challenges.*” Paper presented at the 2nd World Irrigation Forum, Chiang Mai, Thailand, 6-12 November 2016.
- MacDonald, Katherine and Panchali Saika. 2015. “Understanding the Role of Women in Agriculture and Water Management Towards Enhancing Food Security,” In *Impact of Water Users Associations on Water and Land Productivity, Equity and Food Security in Tajikistan: Baseline Technical Report*, authored by Marie-Charlotte Buisson, Katherine MacDonald, Panchali Saikia, Soumya Balasubramanya, Sohrob Aslamy, Ted Horbulyk. December.
- MacDonald, Katherine and Panchali Saika. 2016. “Primary Responsibility for Agricultural Tasks and Decision Making,” In *Impact of Water Users Associations on Water and Land Productivity, Equity and Food Security in Tajikistan: Midterm Report*, authored by Soumya Balasubramanya, Marie-Charlotte Buisson, Panchali Saikia, Katherine MacDonald, Sohrob Aslamy, Ted Horbulyk, Corrie Hannah, Murat Yakubov and Alexander Platonov. May.
- Undergraduate Honors Thesis—*The Value of Appearance: Reputation, Marriage and the Rising Popularity of the Hijab among Young Urban Women in Tajikistan* - 2014

Honors and Awards

- Advanced Research Fellowship, funded by the U.S. Department of State Program for Research and Training on Eastern Europe and the Independent States of the Former Soviet Union (Title VIII) – 2016
- Princeton in Asia Fellowship – 2014
- Leslieanne Shedd Memorial Scholarship Fund for international internships – 2013

- Isla Cirataus Fellowship for international internships – 2013
- Herman S. & Dorothy B. Lederman Endowed Scholarship in the Humanities – 2012/2013
- Naficy Family Fellowship for Excellence in Persian Studies – 2012
- Foreign Language and Area Studies (FLAS) Summer Scholarship for study of Farsi – 2012
- Foreign Language and Area Studies (FLAS) Academic Year Scholarship for study of Farsi – 2011
- National Security Language Initiative for Youth (NSLI-Y) Scholarship for study of Tajik– 2009

Professional & Research Experience

Syracuse University
Teaching Assistant

Fall 2016, Spring 2017, Fall 2017, Spring 2018
Syracuse, New York, USA

- Planned, taught, and graded for three discussion sessions a week for writing intensive course “Intro to Human Geography” (Fall 2016 and Spring 2017), supervised by Dr. Tod Rutherford, the course “Nature and Society” (Fall 2017), supervised by Dr. Tom Perreault, and the course “Nature and Society (Spring 2018), supervised by Dr. Robert Wilson.
- Assisted students in understanding material and assignments

International Water Management Institute
Research Assistant

April-October 2015, December-June 2016
Dushanbe, Tajikistan & Tashkent, Uzbekistan

- Monitored enumerator training as well as data collection, entry, and validation for a baseline survey targeting 2,000 private farms and mid-term survey targeting 2,000 households for project “Impact of Water Users Associations (WUAs) on Water and Land Productivity, Equity and Food Security in Tajikistan.”
- Designed data collection instrument for focus group discussions and key informant interviews on the role of women in agriculture in southern Tajikistan.
- Assisted in design and pre-testing of mid-term survey questionnaire targeted at rural households.
- Organized budget and all logistics for 12 focus group discussions and 6 key informant interviews.
- Acted as observer for focus group discussions with women working in agriculture and key informant interviews in villages throughout southern Tajikistan.
- Conducted qualitative analysis of data collected during focus group discussions and key informant interviews analyzing the role of women in water management
- Wrote chapter entitled “Role of Women in Water Management” for baseline research report and chapter “Primary Responsibility for Agricultural Tasks and Decision Making” for mid-term report delivered to USAID Tajikistan.
- Identifying areas for further research regarding gender and water management in Tajikistan based on qualitative data analysis.
- Reviewed and edited survey language in English and Tajik.
- Attended “High Level International Conference on the Implementation of the International Decade for Action ‘Water for Life,’ 2005-2015.”

Population Services International
Princeton in Asia Fellow

July 2014-March 2015
Dushanbe, Tajikistan & Almaty, Kazakhstan

- Identified and pursued health related grants and new business opportunities in Tajikistan, Kazakhstan, and Kyrgyzstan.
- Worked with team to explore the possibility of social franchise clinics to improve sexual health and reproductive services in Central Asia
- Conducted background research and drafted management structure for upcoming grant applications focused on health.

- Drafted and edited program documents, including success stories, annual reports, and sustainability reports for USAID Dialogue on HIV and TB Project.

williamsworks
Research Intern

August 2013-June 2014
Seattle, Washington, USA

- Researched and drafted briefings and client reports, as well as budget projections for a strategic consulting firm focused on philanthropic initiatives.
- Tracked new business development activities and researched potential opportunities.
- Assisted in event planning and the management of international trips.

Jackson School Journal of International Studies
Editor in Chief

September 2013-June 2014
Seattle, Washington, USA

- Managed faculty relations and recruited members of faculty advisory board.
- Edited undergraduate article submissions.
- Trained and managed undergraduate editorial team.
- Edited and published bi-annual academic journal.
- Member of the editorial board from December 2011-June 2014.

Save the Children Central Asia
Program Intern

June 2013-August 2013
Kulob, Tajikistan

- Conducted interviews with program participants in remote areas of Khatlon, Tajikistan.
- Drafted success stories and case studies.
- Edited reports for donors, concept notes, and other program documents for Central Asia regional office.
- Translated and entered monitoring and evaluation data into excel sheets.

williamsworks
Learning Trips Intern

January 2013-June 2013
Seattle, Washington, USA

- Supported the planning and execution of international trips and field visits

Sahar Education International
Communications and Outreach Intern

September 2011-December 2012
Seattle, Washington, USA

- Supported executive director in office administration for a non-profit that supports girls' education in Afghanistan.
- Developed community partnerships and fundraising opportunities.
- Drafted and edited case studies and grant proposals.
- Created project management proposals and timelines.

Language Skills

- Persian (Tajiki) – Proficient reading, writing, and speaking. Good command of regional dialectical differences and colloquial language.
- Russian – Basic vocabulary.

Service

Syracuse University Program for Refugee Assistance

January 2017 – Present

Volunteer

Syracuse, New York, USA

- Provide English language instruction and assistance with homework or documents to refugees three hours a week at the Northside Learning Center

Geography Graduate Student Organization at Syracuse University

January 2017 – January 2018

Graduate Student Representative to the Faculty

Syracuse, New York, USA

- Attend monthly faculty meetings and communicate relevant information to graduate students.
- Organize events and meetings for the geography graduate student body.