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Tajikistan Farmer and Farm Worker Perceptions of Land Reform and Sustainable Agriculture in Tajikistan



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Farmer and Farm Worker Perceptions of Land Reform and Sustainable Agriculture in Tajikistan
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CURRENCY AND EQUIVALENTS

(as of January 26, 2012)

Currency Unit = Somoni US\$1 = 4.82

1 Somoni = US\$ 0.21

WEIGHTS AND MEASURES

(Metric system)

ACRONYMS AND ABBREVIATIONS

AKF	Aga Khan Foundation
ANOVA	Analysis of Variance
CAWMP	Community Agriculture and Watershed Management Project
CIS	Commonwealth of Independent States
CIG	Common Interest Group
DF	Dekhan farm
DFA	Dekhan Farm Association
DFID	Department for International Development
DLC	District Land Committee
ECA	Europe and Central Asia
FPSP	Farm Privatization Support Project
GAA	German Agro-Action also known as WeltHungerHilfe (WHH)
GBAO	Gorno Badakhshan Autonomous Oblast
GDP	Gross Domestic Product
ha	Hectare
JDC	Jamoat Development Committee
JRC	Jamoat Resource Center
KAP	Knowledge, Attitudes and Practice
LAC	Legal Aid Center
LG	Local government
LLC	Limited Liability Company
LRCSP	Land Registration and Cadastre System for Sustainable Agriculture Project
LRMDP	Land Reform and Market Development Project
LRPT	Land Reform Project Tajikistan
MLO	Micro-loan organization
MLRWR	Ministry of Land Reclamation and Water Resources
MSDSP	Mountain Societies Development Support Program
NBFO	Non-banking finance organization

NGO	Non-governmental organization
OJSC	Open Joint Stock Company
PCU	Project Coordination Unit
PMU	Project Management Unit
RLCC	Regional Land Cadastre Center
RRS	Raions of Republican Subordination
SCLG	State Committee on Land Management and Geodesy
SUDVO	Social Union for the Development of Village Organizations
UNDP	United Nations Development Program
USAID	United States Agency for International Development
VO	Village organization
WB	World Bank
WUA	Water User Association

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EXECUTIVE SUMMARY

Farmer's decisions are largely shaped by their perception of how exposed they are to different social, economic and environmental impacts. Chief among these are limited management control over farmland, land degradation and low levels or sources of other assets. Previous farmer assistance in this area has focused on building capacity to cope with these factors and create incentives for better land management. The experience from former state-directed economies undergoing transition has shown that what works best is to create 'incentive frameworks' that link land tenure (or security) and asset accumulation along with building farmer's capacity to respond to shocks and stresses. This increases farmer confidence or 'resilience' and can lead to greater entrepreneurial behavior or even the adoption of more environmentally-friendly and sustainable land management practices. Discovering these linkages and the underlying conditions of success still requires further field-evidence – especially in countries under transition.

This report presents the findings of a recent study in Tajikistan that examined farmer perceptions in project areas that supported farmland restructuring and sustainable agricultural land management practices among rural households. The findings are expected to be of value to government decision-makers at all levels, civil society organizations, donors and other practitioners interested in practical recommendations for improving current and proposed projects in land reform, agricultural production, sustainable land resource management and related fields. The study was a collaborative effort of the British Department of International Development (DFID), World Bank and United States Agency for International Development (USAID), and focused primarily on sites where these agencies were supporting projects. This report also draws on an earlier 2007 assessment by the World Bank and USAID that examined knowledge, attitudes and practices toward land restructuring among farmers and farm workers (World Bank and USAID, 2008).

Two thirds of Tajikistan's population is engaged in agriculture that falls into two broad farming systems: upland areas characterized by wheat, potatoes and certain types of horticulture along with large tracts of rain-fed pasture; and lowland areas where irrigated cotton in rotation dominates. Unlike other countries in the Europe and Central Asia region, Tajikistan has not completed the reform process of allocating and registering land use rights for independent farmers so that they are better able to manage their farmland in response to market forces. "Freedom to Farm" without government interference is unevenly practiced in the country. At the same time environmental degradation and unsustainable use of natural resources are important constraints to rural growth, and as a consequence, the country's overall agricultural productivity remains low.

Fieldwork for the study was conducted between March and July 2011, and included a quantitative survey of 1,800 farmers in 18 raions (districts), supplemented by focus groups, in-depth interviews and case studies in eight raions. Due to the modest sample size the study cannot claim to be representative of all farms and farmers in the country, however for the areas covered it does describe the results of interventions from the farmer's viewpoint (or perception). While the knowledge, attitudes, and real and perceived assessments are critical in shaping

behavior, it should be noted these may not accurately reflect the actual legal situation or official government data.

Changes and Results in the Process of Farmland Restructuring

Under the World Bank financed Land Registration and Cadastre System Project (LRCSP), there has been significant acceleration in the issuance of land use rights certificates for family farms (25 or fewer shareholders), with 36,911 issued since 2009. This acceleration is an important outcome of the 2009 Government decree. Qualitative results show that farmers acknowledge speedier, more transparent, and no-fee processing of applications compared to the regular Land Committee channels in which farmers might encounter delays, mistakes, and resistance to restructuring by local officials.

The study indicates that rural people have basic knowledge about their rights, but do not fully understand the details of the farmland restructuring process. Both the 2007 and 2011 surveys documented that respondents are aware of having heritable rights and freedom to choose what to plant. However, despite educational efforts by projects, few farmers know about specific differences between farm types, and the steps needed to fully restructure farms.

Key *perceived barriers* to undertaking restructuring include *a lack of machinery, lack of experience managing a farm, lack of access to irrigation water, process costs, and the associated tax and debt burden*, all of which contribute to an overall lack of confidence in farming independently. Those who work on farms yet to be restructured into units of less than 25 members are the most concerned about these barriers. However, *perceived benefits, such as the ability to farm independently and make money are also rated as being very important incentives to restructure.*

Freedom to Farm

The confidence of farmers that they control use of their land has increased significantly since 2007. In 2011, close to half of all respondents strongly agree that farmers can make farming decisions, compared to slightly more than 25% in 2007. Exceptions can be found, however, in cotton production, where only 29% of women strongly agree compared to almost half of men. In collective farms with more than 25 members/workers, farm heads continue to be the decision-makers. Upland farmers are more likely to say they are able to make independent farming decisions than farmers in lowland areas where cotton predominates. Yet areas still remain, such as Tojikobod and Konibodom, where local authorities pressure family farms to grow a fixed percentage of key crops such as potato and cotton.

Gender Issues and Social Tax

Conservative attitudes and practices which are still maintained in some regions of the country limit women's access to information about restructuring and agricultural operations, even though it is widely acknowledged that women comprise the bulk of agricultural labor. In 2011, 25% of women still report having no sources of information on restructuring. Women also are

much less likely than men to have either advanced general education or specialized agricultural training.

The long-term rights of women are affected by their omission from certificates. Survey respondents confirmed that women were omitted from certificates in one of every ten cases. Cultural norms and practices attach more importance to including men's names; however, in about 40% of the excluded cases, the social tax was cited as a somewhat important or very important reason.

The social tax of 15 somoni (about \$3) per month also results in other family members being omitted from certificates, e.g., young adults. Other difficulties with the social tax include payments that are due when members are not working, and having to pay twice if someone works on two farms. ***The burden of the social tax and associated transaction costs can be substantial for small, labor-intensive farms.*** Failure to pay the social tax can result in the farmer losing rights to the land.

Rural Organizations

Mechanisms are needed to resolve problems and take advantage of opportunities that extend beyond the farm and family. Examples of problems include access to irrigation and canal maintenance, machinery, and credit. Coordinated efforts necessary for watershed management and other activities to sustain and protect the environment and resources should also be included. A mix of approaches are being used and tested, including Mahalla Councils, *hashars* and other traditional practices, commercial services by private vendors, and non-governmental and donor organization activities. The Community Agriculture and Watershed Management Project (CAWMP), which used farmer common interest groups, is an example of donor-sponsored activities. With the exception of Vanj, where the Aga Khan Foundation/Mountain Societies Development Support Programme has set up village organization activities as a regular practice, mechanisms to resolve these problems are often either lacking or unable to successfully address issues.

Agricultural Operations, Livelihood Outcomes and Aspects of Vulnerability

Compared to 10-15 years ago, more than half of men and 44% of women say they are better off. When asked about conditions 10-15 years ago, only about 10% of men and women say they are worse off, with the rest saying they are the same. Qualitative results indicate that migrant remittances played a key role in the improved status of many households. Comparing the results between the 2007 and 2011 surveys, farmers indicated a 10% decline in the number of households where farming was the only source of income, and a 10% increase in the number of households where agriculture was no longer a significant source of income.

For farmers in both lowland and upland areas, financial concerns such as access to credit, access to markets, and farm debt are key sources of risk and problems in agriculture and rank in the top five out of 20 problems. Pasture access and rotation also rank in the top five for both regions. In the uplands, the major problem was bad roads, bridges and infrastructure, whereas for lowlands, landslides/mudslides were one of the top five natural resource-related problems.

Generally, lowland respondents and those on family farms expressed more concern about environmental issues. Water conservation, integrated pest management and erosion control practices had the lowest adoption rates and levels of knowledge among farmers, with intercropping and windbreaks the highest.

To examine the sensitivity of households as a factor in rural vulnerability, four variables were assessed to indicate the susceptibility of livelihoods to risks. Upland farming could be considered more sensitive overall than lowland farming, due to higher numbers of respondents growing only one crop, and reporting lower income and education levels. However, more lowland farmers reported agriculture as their sole source of income. Farmers on restructured family farms with 25 or fewer members are more likely to have only one crop and limited educational levels, but slightly more income sources. Women tend to have less income and education, but show more crop diversity and income sources.

To examine the potential to adapt to risks and problems, a number of variables were assessed across types of farmers. Results indicate that lowland farm households are more likely to receive migrant remittances and some cash savings. Upland households are more likely to invest in livestock and slightly more likely to adopt sustainable environmental practices. Family farms with 25 or fewer members are more likely to invest in livestock, make investments in farm improvements, and have two or more income sources. *Family farms*, while being more sensitive in some aspects than collective farms to economic and environmental stresses, do **show more potential to adapt**. These farms made **more investments, adopted more environmental management practices** and between 2007 and 2011 **grew a greater diversity of crops**. Women are less likely to report investments in livestock, but slightly more likely to report income from migrant remittances.

The findings indicate that a combination of farmland restructuring and freedom to farm, although necessary for the incentive framework for agriculture and economic transition, is not sufficient. The experience of other transition economies highlights a package of key reforms: (a) creating macroeconomic stability; (b) reforming property rights; (c) hardening budget constraints on collective and similar farms; and (d) creating institutions that facilitate exchange and develop an environment within which contracts can be enforced and new firms can enter. Family farms need support through this transition in building livelihood assets that help reduce vulnerability.

Recommendations

Strengthen and expand farmland restructuring in order to increase beneficial livelihood outcomes and potential to adapt. In addition to providing donor support, efforts should incorporate as much as possible the Land Registration and Cadastre System for Sustainable Agriculture Project (LRCSP) “good practice” on certificate issuance into other government programs. Although it may not be feasible for the regular government program to adopt the no-fee arrangement or the spatial technology in the short term, ways to address these factors should be considered in the development of the longer-term government strategy. Continued commitment to the issuance of family land use rights certificates is imperative. Future legislation, including proposed amendments to the Land Code, would create conditions for

marketable land rights, and those without legal rights are likely to be particularly vulnerable to land grabs, etc.

Although there has been progress in Freedom to Farm, government interference in agriculture needs to be further reduced. Freedom to farm independently and without interference does, however, need to take into account the constraints of the country's resource base and environmental fragility. Family farms will need continued support and guidance to manage land resources responsibly through efforts similar to those, such as CAWMP, LRCSP and others that supported the environmental management of agriculture and other measures that can reduce sensitivity and increase adaptive capacity.

Improve awareness raising and training activities on farmland restructuring, and give more attention to gender inclusion. Local mass media, seminars, etc. should be used to increase awareness of possibilities and the benefits of acting independently. Efforts should focus on new project areas and test to ensure that people are learning and making informed decisions. The curriculum should include realistic case studies illustrating the consequences of land restructuring in each local area and be gender-inclusive. Education efforts should raise key issues such as land debt and taxes, the social tax and the consequences of not being listed on certificates, and alternative planting strategies. Activities should also focus on building skills to solve common problems rather than just trying to increase knowledge about laws.

The burden and implications of the social tax on farm members, especially on family farms, is a serious issue, and warrant immediate attention and further investigation. Study findings indicate that the current social tax policies appear to discourage the inclusion of women and other adult family members other than the household head from being listed as shareholders on family farm certificates. Qualitative findings indicate that the social tax can even discourage poor households from seeking family farm rights altogether. However, a full analysis of the social tax was beyond the scope of this study. Analysis is now required to explore alternative approaches to social protection. For example, good practice from elsewhere uses policies of income-based taxation rather than a flat rate per head. Any analysis should consider not only issues of social tax policy but also of implementation. In Tajikistan, for example, are there differences between various groups (including family farms versus larger farms versus various forms of non-agricultural enterprises) in social tax collection rates (e.g., enforcement, compliance) and actual access to and flows of social protection benefits.

Strengthen farmer-to-farmer learning about agriculture and access to resources and markets. Informal farmer networks are effective in promoting innovation and replication and help build farmer confidence in operating independently. Conventional methods of communication and learning (e.g., advice through fee-for-service, Jamoat Development Committees) should be complemented with farmer field schools, competitions that highlight good practice, innovation and early initiators, and farmer exchanges.

Support local empowerment through associations and groups. Promoting informal and formal groups, examples of which are already active (e.g., Water User Associations, machinery or pasture user groups) can help farmers access and maintain machinery, infrastructure, pasture,

credit and other inputs. Producer associations and groups provide similar opportunities for farmers to access markets and obtain fairer prices for their products.

Chapter 1: Introduction

General Context

Low levels of assets and capabilities, as well as unsupportive institutional arrangements, constrain the options of the rural poor. Rural vulnerability both affects, and is affected by, household and community access to and use of land and other natural resources. Considerable theoretical literature can be found on the relationship between environmental management of agricultural production and rural vulnerability. However, for the purposes of improving resilience strategies linked to land and other natural resource management aspects, relatively little analysis of relevant field-level experience exists, particularly in transition and other former state-directed economies.

This study examines the results and synergies of operational, field-level interventions in land tenure, sustainable land management and agricultural production. Limited management control over farmland, land degradation and low levels/low diversification of other assets are considered to be key drivers of rural vulnerability. A key focus, therefore, is to examine the effectiveness of strategies resulting from interventions to improve the incentive framework for farmers to help ensure livelihood security. The study seeks to examine linkages between operational efforts to secure family-based land tenure and other agricultural livelihood asset accumulation, and capacities to respond to shocks and stresses as seen in perceptions held by farmers and farm workers, in entrepreneurial behavior and adoption of sustainable land management practices. In the post-Soviet context, land-related family/household-based rights and responsibilities are considered particularly important motivations for sustainable natural resource management and building rural resilience.

Objectives

The objectives of the study are two-fold:

- (a) to assess the impact of operational efforts in farmland restructuring and sustainable agricultural land management on vulnerability amongst rural households in Tajikistan; and
- (b) to provide context and improve strategies for current and proposed operations in land reform, rural growth and sustainable land management given the challenges of economic transition, institutional, economic and environmental fragility, and the emerging risks of climate change.

The primary audiences for this Study are government decision-makers and operational personnel at all levels, civil society organizations, donors and other practitioners in Tajikistan interested in practical recommendations to improve operations and support for farmland restructuring, agricultural production, sustainable land resource management and related fields.

The analysis includes examining the farmland restructuring process since access to land is considered critical to livelihood security, and exploring the status of various types of household capital or assets and perceptions of the external environment or vulnerability context in which

farmers are operating. A preliminary assessment of factors affecting sensitivity and adaptive capacity, using approaches employed for analyzing climate change vulnerabilities, is also conducted.

Background

Tajikistan has an area of some 141,000 km² (14,100,000 ha) of which about 90% is considered upland and mountainous. Gross Domestic Product (GDP) per capita is the lowest among all CIS countries. More than two thirds of the population is engaged in agricultural livelihoods and dependent on 4.6 million ha of agricultural land, the majority of which is rainfed pasture and rangeland. Only about 850,000 ha are arable land, of which some 500,000 ha are irrigated and under rotation between cotton and cereal crops. Wheat, potatoes, horticulture with few significant irrigation systems and extensive pasture characterize upland agriculture. Irrigated cotton in rotation dominates lowland systems. The agricultural sector accounts for around 24% of GDP (average for 2000-2010, World Bank, 2011), but is characterized by low productivity. Environmental degradation and unsustainable use of natural resources are important constraints, and the country's predominantly mountainous terrain makes it particularly vulnerable to natural disasters. Monocropping and improper land use practices, such as wasteful irrigation methods and inadequate drainage, are associated with soil degradation and stagnating yields, especially in lowland areas. Pasture and rangeland degradation, due in part to overgrazing and poor stocking practices, is an important threat. In upland areas, the conversion of steep slopes to cereal production has contributed to land degradation. Other land uses affected by land degradation include rainfed cropping and forests (CDE, 2011).

Farmland Restructuring. In Tajikistan, farmland restructuring, together with complementary support activities, forms an essential element of the incentive framework for agricultural growth. Unlike most countries in the Europe and Central Asia (ECA) Region, Tajikistan has not completed the reform process of allocating and registering land use rights for independent farmers so that they are better able to manage their farmland in response to market forces. After the breakdown of the Soviet collective system, farmers in upland areas have been operating as family farm units cultivating specific plots but mostly without land use rights certificates. In contrast, the cotton-growing irrigated lowlands tended to remain under collective style management with farm managers, raion administrators and cotton processors who had well established ties to government at all levels resisting the break-up of large farms into family units. Under the World Bank-financed Farm Privatization Support Program (FPSP – 1999-2005) the privatization of 10 State farms (predominantly cotton-growing) among 5782 families established a transparent, equitable and generally acceptable model for allocating and registering land use rights with certificates.

Since 2005, a number of projects, including the World Bank-funded Land Registration and Cadastre System for Sustainable Agriculture Project (LRCSP), and the U.S. Agency for International Development Land Reform Project Tajikistan (LRPT) have focused on both educating farmers about their land use rights and the process of restructuring. A major component of the LRCSP has been to expand FPSP to directly assist in restructuring land into family holdings of 25 shareholders or less for about 10% of the arable and perennial land in the 40 (of the country's 58) raions where it has operated as of September 2011. In 2007, an

investigation entitled, “Knowledge, Attitudes and Practices (KAP) Study of Farm Workers and Farmers Concerning Land Use Rights and Farmland Restructuring in Tajikistan” (World Bank and USAID, 2008),¹ highlighted some of the key challenges encountered at the beginning of LRCSP implementation.

2007 KAP Study – Key Findings

- Respondents were positive about the changes in land rights and also with the procedures used.
- Those who were part of family farms had higher agricultural incomes than those on collective farms and also were more likely to invest in improvements on their land. These farmers were also better educated with higher levels of knowledge about restructuring.
- Respondents from cotton-producing areas were much more likely to indicate that they lacked freedom of choice concerning what to plant.
- Marginalization of women was notable. They were less likely to attend informational meetings, less likely to visit officials and other information sources, less likely to have invested in improvements in their land, and more likely to be farming in cotton areas.
- Constraints that prevent farmers from petitioning to create family farms include lack of machinery, lack of cash or credit to buy inputs, and poor access to irrigation water.

Since 2007 a cumulative total of about 50,000 family farm land use certificates have been issued in LRCSP and non-LRCSP sites, with significant acceleration in issuance since 2009 and the implementation of a Government Resolution. The July 2, 2009 Government Resolution 406 (with an Action Plan on Reforming Agriculture) included a strong commitment to accelerating farmland restructuring and freedom to farm, and was followed by a number of regulatory reforms to support this acceleration. While the process for certificate issuance in LRCSP follows the FPSP model and charges no fees, the domestically-financed Land Committee process is fee-based with additional transaction costs for beneficiaries, and has less emphasis on fairness, transparency, and spatial accuracy.

Rural Production and Environmental Management. The period since 2005 has also seen various projects supporting sustainable agriculture and land resource management as part of strategies to address land degradation, as well as rural growth. One of the largest efforts has been the World Bank-financed Community Agriculture and Watershed Management Project (CAWMP, 2005-2012). CAWMP represents a significant investment of capital with almost \$7.5 million of project financing, matched by \$3.4 million beneficiary contributions, for more than 3,800 rural production investments that have benefited more than 40,000 households engaged in upland agriculture. Financing conditions for these investments have shifted the focus from expectations of regular subsidies under collective farming, and post-independence efforts in humanitarian assistance and rural infrastructure, to fostering more entrepreneurial behavior among farmers and environmental management of land resources in agricultural production. Legal agreements governing CAWMP permitted issuance of land use rights certificates (including for sloping lands) in conjunction with LRCSP to project participants on the basis of adopting land resource management practices. The use of grants, and not loan arrangements, along with participatory village planning helped avoid social exclusion, while organizational

¹ The 2007 Knowledge, Attitudes and Practices (KAP) survey was a collaborative effort of the U.S. Agency for International Development Land Reform and Market Development Project and the World Bank-financed LRCSP. A total of 1500 households in 15 raions from five regions were surveyed.

arrangements that included Jamoat Development Committees (JDCS) as financial intermediaries coupled with support for financial management by farmer-based Common Interest Groups (CIGs) improved accountability.

World Bank and USAID-supported operational efforts in land reform and sustainable agriculture, namely three projects – LRCSP, CAWMP and LRPT - form the primary focus of this study. LRCSP started implementation in 2006. Its original phase will be completed in 2012, and additional financing is planned for operations until 2015. LRPT is a three-year project due to complete in 2013, and continues the work of the Land Reform and Market Development Project, which collaborated in the 2007 KAP study.

Examining the Incentive Framework

The study attempts to answer a set of key questions that help provide insight into structures and dynamics of vulnerability in Tajikistan, particularly in relation to access to and management of farmland by rural populations:

- What is the current status of knowledge and attitudes among farmers and farm workers with respect to land use rights and farm restructuring among the respondents? How have knowledge, attitudes and practices changed in selected project sites since the 2007 assessment?
- Do irrigated lowland areas with potential to grow cotton offer farmers less “freedom to farm” or independence in farming opportunities than other areas? Do these factors make households in such areas more vulnerable and less adaptable to stresses and risks?
- Are land rights held in family-based farms associated with higher levels of agricultural productivity, income stability, investment in land and adoption of more sustainable agriculture practices (including management of soil and water)? Is this associated with increased adaptability to environmental stresses and risks/climate change?
- Do women, who tended to have fewer sources of information and access to fewer sources of social capital before changes in land use rights, continue to have less access to these resources afterward? Are there other key outcomes linked to aspects of gender?
- How can project created institutions (Jamoat Development Centers and village level groups) be linked with formal and traditional institutions (e.g., recent developments towards elected Jamoat councils, traditional groups of elders)? How can elite capture and exclusion of disadvantaged groups be avoided?

In answering these questions, the study compares outcomes disaggregated by three major variables:

- (a) ***Size of farm (number of shareholders)***. The study distinguishes between family farms with 25 or fewer shareholders on a certificate (which includes dekhan farms held by an individual shareholder but usually farmed by a family), and larger collective-style farms with more than 25 shareholders or adult workers. Using this threshold of 25 shareholders is consistent with Government policy, and other initiatives in farmland restructuring.
- (b) ***Farming systems***. Two major systems are recognized: lowland irrigated areas growing cotton or with potential to grow the crop, and upland areas where wheat, potatoes and horticulture often dominate. Each system is also potentially associated with different degrees

of independence in farming decisions. Earlier studies, including the 2007 KAP study, have shown that despite restructuring, farmers in cotton-growing areas were not free to make independent farming decisions. Upland areas, in contrast, appear to be operating in many places as *de facto* family farms that have not been regularized, i.e., allocations have been made but land use right certificates have not been issued to shareholders.

- (c) **Gender.** As noted above in the 2007 KAP study, as well as others (Shahriari *et al.*, 2009), women have been disadvantaged in the restructuring process. It should be noted that while there were female respondents in the survey and participants in the focus groups and interviews, in most cases there were too few female farm heads to disaggregate in the analysis.

Features of the Study

- It is important to note this study examines aspects of rural vulnerability through the perceptions of 1800 farmers working on the land. Thus, the respondents represent farmers of various types (shareholders, heads or managers, tenants or hired workers) who are currently cultivating land in addition to just a household or presidential plot. As a result of the land restructuring process, many of these individuals are now or will become farm decision makers as they gain rights to land. Thus, their knowledge, attitudes, and real and perceived assessments are important since these will influence their behavior.
- Given that the central focus was on understanding the situation of types of farmers or farm workers and the results of interventions from their viewpoints, the study was not designed to scientifically represent all farms or farmers in the raions or country. Furthermore, the perceptions may not accurately reflect the legal situation. Thus, data on farm types, sizes and income may not coincide exactly with census or with other official government data on land allocations. The study did, however, try to represent a wide variety of farmers and farm types across the main regions of the country.
- The study primarily focused on current project areas addressing land reform and sustainable agriculture financed by the World Bank and USAID, and included sites where DFID and its partners were supporting activities in rural growth. The study included areas where project activities have been active for varying lengths of time, and also areas where a range of future project activities is possible.

The Structure of the Report

Chapter 2 describes the methodology and types of data collected for the study. It also briefly describes the criteria for site selection and efforts undertaken to ensure at least 30% of respondents in the survey are female. Chapter 3 presents the findings on aspects of the farmland restructuring process. Issues covered include awareness and knowledge of farmland restructuring and land use rights, information seeking about restructuring and land use rights, and relevant comparisons where possible with the findings of the 2007 KAP study. A closer examination of attitudes about “Freedom to Farm” and farm decision-making is given in Chapter 4 including a comparison with 2007. Chapter 5 provides results for farm operations and household outcomes. Included are findings on sources of agricultural information, investments in farm improvements and adoption of environmental management practices. The chapter also examines the nature and extent of savings and sources of income, as well as farmer assessments

of “Whether better or worse off?” Chapter 6 examines the traditional and emerging roles of public, commercial and non-profit entities in linking farmers to needed services and support, and in resolving problems that extend beyond the boundaries of individual farms. Chapter 7 first examines the results of the study in terms of perceptions of major problems in agriculture and in the status of five types of livelihood capital or assets. Second, this chapter offers some initial insights into sensitivity and adaptive capacity as factors that contribute to analyzing vulnerability. Finally, Chapter 8 presents conclusions and recommendations.

The results of the study are relevant to a number of on-going and proposed efforts addressing land reform, agricultural growth, sustainable land management and climate change resilience in Tajikistan. (A List of Complementary Projects is presented in Annex 1). The Government of Tajikistan’s strategy for agriculture development focuses on the efficient use of land, water, financial and other resources and elimination of government intervention in farmer decision-making. Within the World Bank Group, these efforts include: a) assisting in measuring Tajikistan’s Policy Development Program Grants 4-6 which target land use rights certificate issuance, especially regarding Freedom to Farm; b) Mainstreaming Governance and a subcomponent on agriculture; and c) trust fund support to build capacities in poverty assessment. For USAID and DFID, the study contributes to assessing and informing their programs of economic growth, which include support for private sector development and agricultural productivity. The findings are also relevant to the climate change resilience agenda for the country, which includes investment in agriculture and sustainable land management as part of the Pilot Program for Climate Resilience (PPCR) in Tajikistan.

Chapter 2: Methodology

Quantitative Methods

A quantitative field survey of 1800 farmers, 100 each from 18 raions representing different regions of Tajikistan, plus additional qualitative focus groups and case studies in eight of the 18 raions, was undertaken in two phases between April 29 and August 8, 2011, in order to assess rural vulnerabilities of farmers. As a result of land restructuring activities, farmers on larger collective-type farms with many workers/shareholders have been receiving long-term rights (along with certificates) to smaller parcels of land. Many are still working on larger-scale farms that may be restructured in the future. Some have received land but have not yet received certificates. Because of the dynamic changes that have occurred or will occur, the research targeted all those who are working on a farm other than their own small household plots or presidential plots. The objective of the survey and qualitative work was to better understand the knowledge, perceptions and actions of farmers who have gone through the restructuring process as well as those who might go through it in the future. Their attitudes about land restructuring, crop selection and farm investment, and environmental concerns will be important in determining the future of agriculture in Tajikistan.

Tajikistan is a mountainous country with significant variations in climate conditions, environmental problems, agricultural conditions and cultural experiences. Different regions also have been targeted by different international projects that have likely led to a variety of outcomes. Although the study made an attempt to cover a wide variety of regions and conditions in the country, it made no attempt to cover all regions. The 18 raions selected shown in Table 2-1 and the map shown at the end of this chapter (Map 2-1) represent nine lowland raions, which typically are irrigated and can grow cotton, and nine upland areas where wheat and potatoes are common crops, as well as horticulture. Raions selected also represent areas of greater current or future focus for international projects.

Within each of the 18 raions, the survey team identified five jamoats, and within each jamoat, 2 villages, where interviews were conducted. A total of 10 interviews were conducted in each village (20 for each jamoat, and 100 for each raion). Sampling was done using a random sampling process within each village that gave each household the same chance of being selected. Official lists of farmers were not used for several reasons. First, previous studies have indicated that the names of some of those who work on farms are not found on official lists. Second, some of the names on official lists belong to individuals who are no longer actually working on the land (many men are now working in Russia). Finally, some farmers are in transition from one type of farm structure to another, and thus would not be found on any comprehensive list. The method used was designed to gather information from typical farmers who work on the land. This included some farm heads and managers, many shareholders, and a few hired workers or tenants. Because the study sought to understand the knowledge, attitudes, behavior, and vulnerabilities of a wide spectrum of farmer types, information from a wide variety of farmers was needed. This information is valuable in understanding the knowledge and perceptions of each group. However, one limitation is that in some cases respondents were

poorly informed about exactly what type of farm they were working on, what it produced, etc.

Table 2-1. The 18 raions studied, classified as lowland/upland, and by project

	Upland/ Lowland	World Bank- financed LRCSP Areas	World Bank- financed CAWMP Areas	USAID Land Reform Project Areas
Sughd Oblast				
Djabbor Rasulov	Lowland	X		
Konibodom	Lowland	X		X
Kuhistoni Mastchoh	Upland	X	X	
Pandjakent	Upland	X	X	
Zafarobod	Lowland			X
Khatlon Oblast				
Danghara	Upland		X	
Jilikul	Lowland	X		
Panj	Lowland	X		
Qabodiyon	Lowland			X
Shahrituz	Lowland	X		
Temurmalik	Upland	X		
Yovon	Lowland	X		
Regions of Republican Subordination (RRS)				
Faizobod	Upland	X		
Hissor	Lowland			
Nurobod	Upland	X		
Rasht	Upland	X		
Tojikobod	Upland	X	X	
Gorno Badakhshan Autonomous Oblast (GBAO)				
Vanj	Upland	X	X	

The field interviewing was carried out by a reputable Tajikistan survey firm, who helped develop and pre-test the survey questionnaire, provided training for field supervisors and interviewers, supervised and conducted face-to-face field interviews with all 1800 respondents, coded the data, and provided copies of the dataset to the survey team. When interviewers arrived at a village, they began with a randomly selected household using a village map. Each household was asked if someone in that household was currently working on the land (other than household or presidential plots). A person working on the land was then interviewed. In order to ensure an adequate representation of women in the survey (women do the majority of farm work in the country), a goal of having at least 30% female respondents was set. In cases where more females were needed, the interviewer would ask for a female that matched the study criteria. At least 30% of each raion's interviewees were female in most cases. In five of the 18 raions, it was not possible to find enough women (Zafarobod, 21% women; Temurmalik, 23%; Rasht, 7%; Tojikobod, 15%, and Kuhistoni Mastch, 6%). Overall, females constituted 37.4% of respondents. Following the first interview at a randomly selected house, the interviewers used a skip interval to determine the next house. In the event that there was no eligible person at the selected house, the interviewers would move first to the house on the left of the selected house. If that person was also not eligible, they would move to the house to the right of the selected house. If no one could be found that was eligible, they used the skip interval to move to the next house. Supervisors checked each questionnaire in the field, and spot-checked 20% of the respondents to

make sure they were in fact interviewed. Supervisors also contacted those interviewed if there were problems with the questionnaire that needed to be resolved.

Another purpose of the survey was to permit comparisons between the 2011 data and the baseline (KAP) survey conducted in 2007. Eight of the raions selected for the 2011 survey were surveyed using many of the same questions as in 2007. In these eight repeated raions, the same jamoats and villages were used in 2011 as in 2007. No attempt was made to interview the same exact individuals, but since the same villages and jamoats were used, some comparisons between 2007 and 2011 were possible. More details on the repeated raions are provided in Chapter 3.

Qualitative Methods

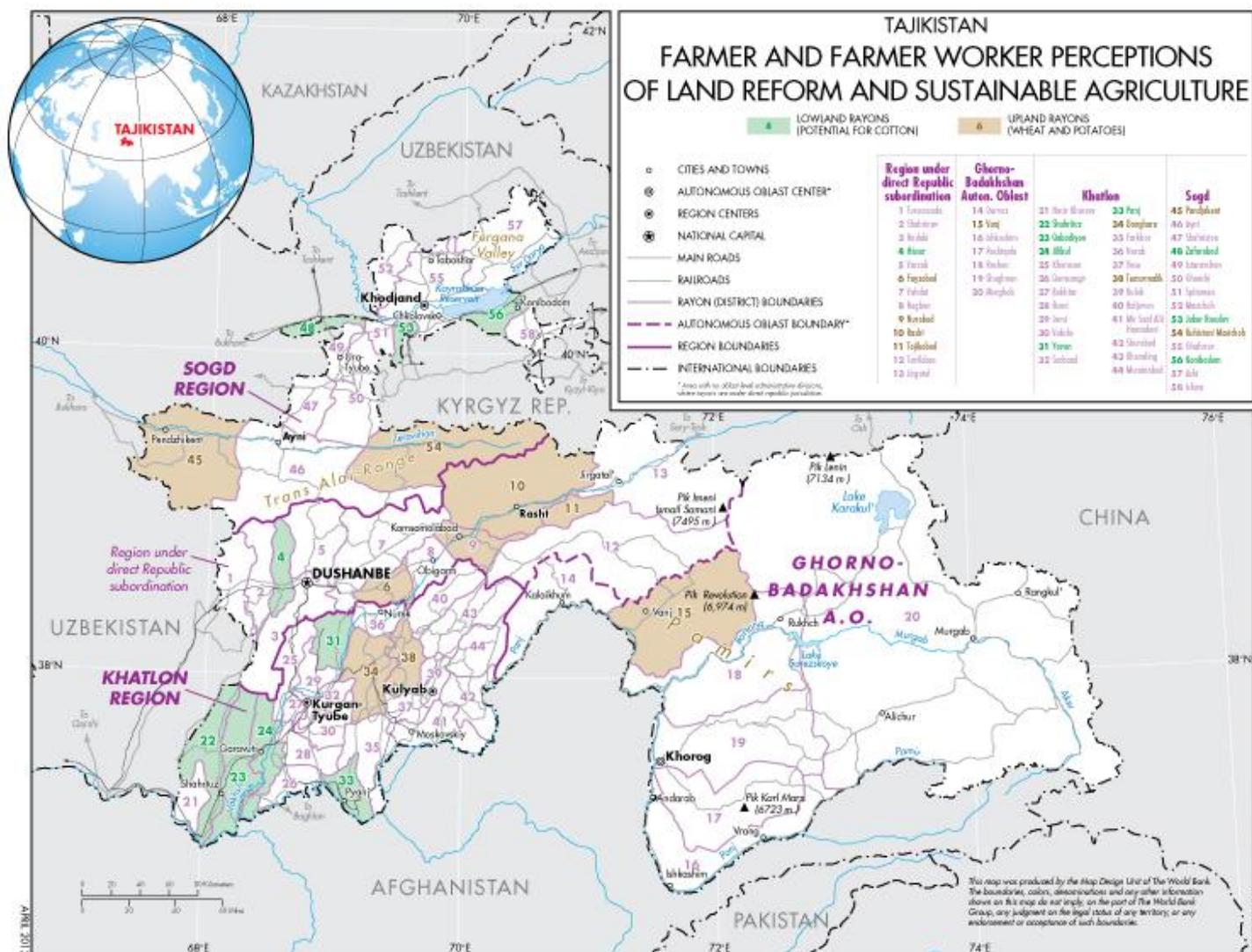
Qualitative methods including focus groups and in-depth interviews were used to gain a deeper understanding of certain groups and issues. Focus groups with women, young farmers, and those on family and collective farms were conducted in eight of the 18 raions to assess the following topics:

1. Their experience and/or views about farm restructuring – the process, barriers, and results.
2. Knowledge and information sources about farm restructuring and land use rights
3. Current problems and challenges on their farms and in their region
4. Main impacts of land restructuring
5. Special problems of the involvement of women in land restructuring and current farming
6. Perceptions about climate change and environmental problems in their area

In addition to the focus groups, qualitative team members (including two trained focus group interviewers and a field supervisor from the survey firm plus representatives from the project research team) conducted in-depth interviews with local officials, including the head of the land committee and local agricultural officials and NGO representatives.

A second focus of the qualitative work was on mechanisms by which groups or organizations work to resolve farm and general community problems. CAWMP created a number of farmer Common Interest Groups (CIGs) to work on agricultural, environmental and small business projects that were tackled as a group. Through the project, farmers jointly undertook the design and implementation of small-scale investments to increase the value and sustainability of agricultural production. Interviews were conducted with local residents and CIG group members to better understand the process they went through, and how the social networks created as a result of the CIG work helped them. Other group activities focused on identifying and valuing social networks that helped resolve community-level problems too large for individual farmers.

Map 2-1. Tajikistan with Study Sites



Chapter 3: Farmland Restructuring

This chapter specifically examines progress in restructuring and farmer understanding of basic land use rights. The findings contribute to assessing the outcomes of policy reforms, in particular the July 2, 2009 Government Resolution 406 (with an Action Plan on Reforming Agriculture) which included a strong commitment to accelerating farmland restructuring. Information collected from the 2011 and 2007 surveys was used to support this analysis.

Farm classification

During the early 1990s, farms in Tajikistan were characterized by large scale centrally-managed Soviet-style farms with many workers such as Kolkhoz and Goskhoz (Sovkhoz, and other forms), along with Joint Stock Companies that provided some shareholder rights. This was especially pronounced in lowland areas where irrigated cotton was a key crop. A key focus of the reform activity starting in the 1990s was dividing these farms, often in accordance with historic “brigade” areas, and reclassifying them as Collective Dekhan Farms with shareholders (who sometimes have rights to an identified small plot of land within the Collective Dekhan Farms). In most cases, farm heads still play a key role in determining the overall strategy for farm activities on these large farms. The next stage was to divide these Collective Dekhan Farms into smaller family farms (called either Family or Individual Dekhan farms) with 25 or fewer members. Farmers on these family farms do not legally own land, but hold long-term, inheritable rights to land. In this study the term family farm is used to cover both Family or Individual Dekhan farms.

Since these restructured farms usually have 25 or fewer members, the analysis compares those with 25 or more member/workers with those with fewer than 25 members. A second major way of comparing respondents was whether or not they are working in an upland or lowland area. In lowlands, cotton is at least potentially a crop; in the uplands wheat, potatoes and horticulture often predominate. The analysis separated the 18 surveyed raions into nine lowland and nine upland areas shown in Table 3-1.

Table 3-1: Classification of 18 raions as being “upland” or “lowland” with % growing cotton.

Lowland Raions			Upland Raions		
Region	Raion	% of respondents growing cotton	Region	Raion	% of respondents growing cotton
Sughd	Djabbor Rasulov	54	Sughd	Kuhistoni Mastchoh	1 ^a
Sughd	Konibodom	87	Sughd	Pandjakent	0
Sughd	Zafarobod	92	Khatlon	Danghara	36 ^b
Khatlon	Qabodiyon	92	RRS	Faizobod	0
Khatlon	Shahrituz	70	RRS	Rasht	0
Khatlon	Yovon	40	RRS	Nurobod	0
Khatlon	Jilikul	73	RRS	Tojikobod	0
Khatlon	Panj	100	Khatlon	Temurmalik	0
RRS	Hissor	35	GBAO	Vanj	0

Source: World Bank (2011)

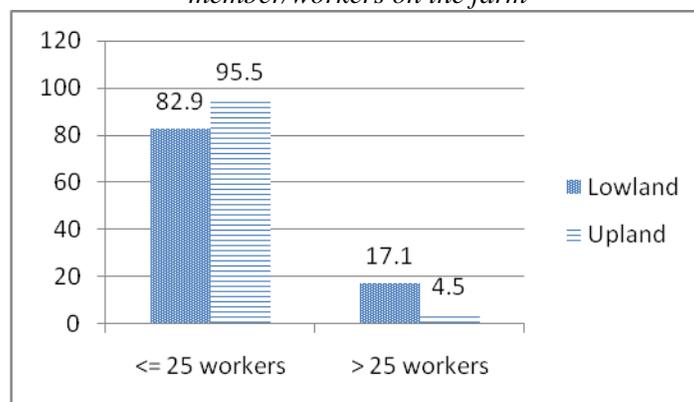
a. This observation is likely a small coding mistake since cotton cannot grow in this raion, but this does not affect any of the results.

b. The 36% is likely a particular agro-ecological pocket within Danghara that is not typical of the rest of the raion. The majority of these respondents ‘somewhat’ or ‘strongly’ agreed to having freedom to farm (e.g. selecting what to grow, inputs, financing and harvesting, etc.).

Respondents are predominately from farms with 25 or fewer members/workers in both lowland and upland areas, but more are from larger farms in the lowlands

Figure 1 shows that while the great majority of farmers in both upland and lowland regions perceive that they are now on farms with 25 or fewer members/workers, 17% of respondents from lowland areas report that they are still working on larger farms compared to only 4.5% for upland respondents. Table 3-2 shows that respondents from lowland areas report significantly larger average farm size for those with 25 or fewer members/workers, but significantly smaller average farm size for those with more than 25 member/workers. Although there were few respondents from upland areas with many member/workers, those that were included are very large, with an average size of almost 450 hectares. Median size comparisons show that for farms with 25 or fewer workers, half the farms in upland regions are 1 hectare or smaller in size, while in lowland areas half are 5 hectares or smaller.²

Figure 3-1. Percentage of respondents from Lowland and Upland areas by the number of members or member/workers on the farm



Source: World Bank (2011)

The study shows that many more respondents in upland (95.5%) and lowland (82.9%) areas consider themselves as already managing their farms as family holdings, than what is indicated in the official data. The official data on the number of land use rights certificates issued to families (i.e., those with 25 or fewer shareholders) indicate that at that time of the survey, no more than 20% of the eligible agriculture land area was held in the form of family land use rights certificates.³ At the time of the survey, farmland restructuring was ongoing, and as mentioned

² The small farm size resulting from farmland restructuring is due to the limited arable land area. In some areas, another contributing factor is the decision to allocate land rights to all villagers, whether they had engaged directly in agricultural work or not. Tajikistan is already exporting rural population as temporary migrant laborers, and history shows that we should expect that Tajikistan's population will also eventually shift from rural to urban areas, and that some farm holdings will then be consolidated. However, Tajikistan's urban areas are not ready for a sudden or massive rural to urban migration. Such movements in the short- and even medium-term would increase poverty as well as the potential for conflict. Family farms hence offer a safety net in the meantime.

³ It was estimated that LRCSP-issued certificates account for half of this area, with the remainder covered by the regular Land Committee process.

above, the survey was not designed to proportionately represent types of farms. It appears that the survey may have disproportionately covered farmlands where the LRCSP, or the predecessor FPSP, have been particularly active. Furthermore, since respondents were not asked to show the certificates, some respondents may have been referring to a documented share in a farm, or some other document, e.g., a tax receipt, rather than a family land use rights certificate. Other possible reasons for the disconnect include farmers who, after the breakdown of the Soviet system, have been operating as family units cultivating specific plots without use right certificates. While the perception that farmers have of operating as family units appears promising as part of the incentive framework and in reducing vulnerability, it is critical to note that continued issuance of certificates is imperative. Future legislation, including proposed amendments to the Land Code, would create conditions for marketable land rights and those without legal rights are likely to be particularly vulnerable to land grabs, etc.

Table 3-2. Average farm size by number of members or member/workers from Lowland and Upland regions

	<=25 members				>25 member/workers			
	Mean	Median	Std Dev	N	Mean	Median	Std Dev	N
Lowland	9.9 ha	5.0 ha	15.7	667	65.2 ha	52.0 ha	53.9	138
Upland	6.5 ha	1.0 ha	24.6	725	447.7 ha	170.0 ha	749.1	34

Source: World Bank (2011)

Of the 1800 farmers surveyed, 673, or 37.4%, were women. Women were more likely to be on larger farms and in the lowland region. Table 3-3 shows that on farms with more than 25 member/workers in the lowland region, females constituted 50% of the sample, while in upland areas on farms with 25 or fewer members, they made up less than one-third of those interviewed. One major reason for this is that cultural norms in several upland areas restrict the ability of women to be interviewed, so this does not mean that women are less involved in agriculture in upland areas. As shown in Table 3-4, women also tend to report smaller farm sizes than men, but statistical variation (i.e. standard deviation) is so large one cannot say that these differences are statistically significant.

Table 3-3. Male and female respondents by Lowland or Upland region and number of members or member/workers

	<=25 members				>25 member/workers			
	Men		Women		Men		Women	
	N	%	N	%	N	%	N	%
Lowland	394	59.1	273	40.9	68	49.3	70	50.7
Upland	497	68.6	228	31.4	21	61.8	13	31.4

Source: World Bank (2011)

Table 3-4. Average farm size by gender

	<=25 members			>25 member/workers		
	Men average farm size	Women average farm size	Standard Deviation	Men average farm size	Women average farm size	Standard Deviation
Lowland	10.6 ha	8.8 ha	15.7 ha	74.8 ha	54.1 ha	53.9 ha
Upland	7.27 ha	4.6 ha	24.6 ha	680.8 ha	144.7 ha	749.1 ha

Source: World Bank (2011)

Lowland farmers, women, and farms with more than 25 member/workers have less information access

One major activity by many donor projects as well as the government of Tajikistan has been to provide information to those working the land about their rights to land and procedures for restructuring. The survey measured information-seeking by farmers by asking whether they used each of a list of possible information sources including meetings/seminars, mass media (radio, TV, newspapers), publications, or a variety of interpersonal sources ranging from other household members to experts. An information-seeking score was compiled – the sum of all the sources used. A 13-item knowledge test was given to each respondent to assess knowledge of both land use rights and procedures used in farm restructuring.

Table 3-5 shows that upland farmers have higher information seeking scores although knowledge levels are about equal. Men have higher information seeking scores and higher knowledge than women. Individuals on farms with more than 25 member/workers (which are usually farms that are not fully restructured) have low information seeking and knowledge scores. All differences except the upland/lowland knowledge scores are statistically significant at the 5% level. Detail on the specific sources used is examined in Chapter 6, Table 6-2.

Table 3-5: Information seeking and knowledge about farm restructuring and land use rights by upland/lowland farms, gender and number of workers on the farm

	Number of Information sources used	Number of items correct on a 13-item knowledge test
Upland	5.2	7.4
Lowland	3.6	7.5
Men	4.8	7.6
Women	3.6	7.2
25 or fewer members on farm	4.7	7.6
More than 25 farm member/workers	2.9	6.7

Source: World Bank (2011)

To measure their attitude about the land restructuring that has taken place, respondents were asked how much in favor they are of the changes that have taken place. Results in Table 3-6 are shown for upland/lowland regions, number of members or member/workers on the farm, and gender. The table indicates that the majority of respondents are either somewhat in favor or strongly in favor of the land restructuring that has occurred. There are no major differences in attitude between those living in lowland or upland regions. Women and those on farms with more than 25 member/workers tend to be more negative about the restructuring that has taken place. One reason for this attitude is the absence of women’s names on land certificates in order to avoid the social tax. This is described in further detail in subsequent chapters.

Table 3-6. Percentage of respondents favoring changes in land restructuring by upland or lowland region, number of farm members or member/workers, and gender

	Strongly opposed	Not very much in favor	Somewhat in favor	Strongly in favor	Don't know	Total number
Lowland	3.3	25.3	38.6	14.7	18.1	900
Upland	5.3	21.6	35.0	19.3	18.8	900
<=25 members	4.3	20.7	38.2	19.8	17.0	1392
>25 member/workers	2.3	35.5	33.7	11.0	17.4	172
Men	4.2	19.7	41.6	16.6	17.9	1127
Women	4.6	29.7	28.7	17.7	19.3	673

Source: World Bank (2011)

Restructuring and its outcomes: Analysis of raions between 2007 and 2011

Farmland restructuring may change farmer perceptions about how to manage land and make input decisions. It may also lead to improvements in farmer income or aspects of rural vulnerability. This section reviews differences that were measurable between the two survey periods. Further details on these comparisons, by raion, are contained in Annex 2. Briefly, results indicate that respondents are roughly similar between the two time periods, with the exception of Zafarobod where more respondents self-identified themselves as Tajiks in 2011 as compared to 2007. For this reason, caution is advised in interpreting results from Zafarobod.

There has been a strong shift toward family farms, increasing from 39% to 68%

A major emphasis of both the World Bank-financed LRCSP and USAID-financed LRPT was on land restructuring and land use rights; thus, questions were asked to assess change in this area. One key question examined the extent to which actual changes in farm type have occurred among the eight raions that overlapped between the 2007 and 2011 surveys (Table 3-7).

Table 3-7. Percentage of farmers reporting by farm type and raion

Raion	Collective type farms of all types (Kolkhoz, Joint Stock Company, Goskhoz, Collective Dekhan farms)	Family DK farms of all types (including farms held by one individual)
Sughd Region		
Zafarobod 2007	19	81
2011	11	89
Pandjakent 2007	88	12
2011	65	35
Konibodon 2007	92	8
2011	75	25
Khatlon Region		
Qabodiyon 2007	80	20
2011	21	79
Yovon 2007	22	78
2011	21	79
RRS Region		
Faizobod 2007	73	27
2011	42	58
Rasht 2007	12	88
2011	35	65

Raion	Collective type farms of all types (Kolkhoz, Joint Stock Company, Goskhoz, Collective Dekhan farms)	Family DK farms of all types (including farms held by one individual)
GBAO Region		
Vanj 2007	99	1
2011	0	100
Totals 2007	484/60.6%	315/39.4%
2011	255/32.5%	530/67.5%

Source: World Bank and USAID (2008); World Bank (2011)

There was a strong shift toward family farms (including both family and individual dekhan farm types) in six of the eight raions. Across the eight raions, 67.5% of respondents consider themselves as operating on family farms, compared to 39.4% in 2007. Rasht was the only raion where respondents from family farms declined during the period. In Yovon, the percentage of farms that were family farms was already high in 2007 and remained stable. Yovon was one of the first areas to undergo restructuring starting with FPSP.

Farmers who said they were cultivating land on a family farm were asked if they or someone in their household had a certificate proving ownership of their rights to land. In the eight repeated raions, 87% said they or someone else in the household had a certificate in 2007, and this increased to 91.5% by 2011. Only 2.6% said “no” and the remaining 5.9% were not sure. In Pandjakent the percentage saying they lacked a certificate was 14.3%, but in the other seven raions the percentage was less than 3.5%. Women were much more likely than men to say that it was “someone else” in the household that held the certificate and not them. It was not feasible to ask respondents to show copies of their certificates. Furthermore, enumerators were not trained to authenticate land use rights certificates. However, these results suggest that more farmers are now receiving their certificates as their farms are being restructured than was the case in 2007. Qualitative results from focus groups indicate that in areas where the World Bank is not assisting farmers in the certification process, long delays often occur.

Table 3-8 uses World Bank LRCSP and government data to show annual issuances of certificates. A large number of farmers began receiving certificates confirming their rights to restructured land beginning in 2009, and this accelerated further in 2010 and 2011 – with over 30,000 in the past two years. The government estimates that another 15,000 certificates have also been issued directly by land committees to farmers during this period.

Table 3-8. Annual number of certificates issued by the World Bank-supported LRCSP project

2006	2007	2008	2009	2010	2011	Total
236	59	513	5431	16,528	14,952	38,486

Source: World Bank, LRCSP (2011)

A strong majority of farmers favor farm restructuring and the process used

In both 2007 and 2011, respondents were asked an open-ended question about how changes in land use rights and land restructuring had affected their households. Among those who answered the question, about two-thirds emphasized economic improvements had resulted, while only 8.6% in 2007 and 4.9% in 2011 said they had been negatively impacted. Others commented on

their freedom to decide what to plant, or merely the fact that they became owners of long term rights to their land.

The majority of farmers in both 2007 and 2011 indicated that they were in favor of changes in farm restructuring that occurred in Tajikistan. Table 3-9 shows differences across time for the eight raions. Results show a strong majority of respondents are somewhat or very much in favor of land restructuring during both time periods, but the 2011 results show a decline in favorability, with one in four now “not very much in favor.” Women in lowland areas are less likely to be in favor. In contrast to the slight negative trend for restructuring itself, respondents have become more positive about the process used. One possible reason for this is that the World Bank-financed LRCSP began directly assisting farmers in getting certificates for their land.

Table 3-9: Percentage of respondents who are favorable toward changes in land restructuring that have occurred, and who are satisfied with the process used to restructure land.

	Strongly opposed	Not very much in favor	Somewhat in favor	Strongly in favor
How much in favor are you of the changes that have occurred in the area of land restructuring?	2007: 8.4 2011: 3.5	2007: 9.6 2011:24.6	2007: 47.4 2011: 40.1	2007: 21.3 2011: 17.1
	Not at all satisfied	Not very satisfied	Somewhat satisfied	Very satisfied
Based on your knowledge of the process for deciding how to divide up kolkhoz land, how satisfied would you say you are with the process used—that is, the way that it is being done?	2007: 21.3 2011: 7.5	2007: 13.5 2011: 21.6	2007: 39.9 2011: 39.6	2007: 15.5 2011: 24.3

Source: World Bank and USAID (2008); World Bank (2011)

Farmers lack knowledge of specific laws, but have general knowledge of their land use rights

Changes in knowledge about land restructuring and land use rights were measured by asking respondents about specific laws in each time period, giving them a 13-item knowledge test that measured both knowledge of general land rights and also the process used to restructure land, and finally a self-assessment in which respondents were asked to rate their own knowledge. Results show a lack of knowledge of specific laws, but fairly good general knowledge of land use rights. Most rated their own knowledge as low.

Table 3-10 shows farmer knowledge of specific laws relating to land use rights and land restructuring. It is important to note that the laws described were not the same in the two time periods. In 2007, three of the laws were basic documents that focused on land restructuring and land use rights. By 2011, additional laws further refining the legal codes were promulgated. Table 3-10 indicates that while in both time periods the majority of farmers had low levels of knowledge about these specific laws, the 2007 results showed higher levels of knowledge than the 2011 study. This might be due to the fact that the 2011 laws were refinements of the earlier laws, and may have been regarded as less significant. It also could be the result of the amount of publicity given to announcing and explaining these laws. In 2007, a considerable amount of mass media activity was focused on public education about the laws and land use rights in general.

Table 3-10: Percentage of farmers in 2007 and 2011 knowledgeable of specific laws relating to land restructuring and land use rights

	Never heard of it	Heard but don't know much	Have some specific knowledge of what it says	Have a good knowledge of what it says
2011 Laws				
2011 Amendments to the Land Code of RT	59.6	36.3	3.3	0.9
2008 Law on mortgage	67.5	27.5	4.8	0.3
2008 Law on state registration of immovable property and rights to it	66.1	27.8	5.1	1.0
2009 Law on Dekhan farms	40.5	47.5	10.1	1.9
Order of the president "about additional steps on restructurization and changes of agricultural organizations" from June 30, 2006	52.4	40.4	4.9	2.4
2007 Laws				
Land code of the Republic of Tajikistan	38.5	37.6	16.6	7.3
The Law of RT "On Dekhan Farms."	37.3	32.6	20.4	9.8
The Law of RT "on Land Reform."	50.8	29.8	13.4	6.1
Decree of the President RT "On Implementation of Land Use Rights."	41.8	36.5	14.9	6.9
Decree of the President of RT "On Reorganization of Agricultural Enterprises and Organizations."	53.9	30.4	11.8	4.0
Decree of the Government of the RT "On Reorganization of Agricultural Enterprises and Organizations for 2002-2005."	65.4	20.9	9.6	4.1

Source: World Bank and USAID (2008); World Bank (2011)

Results of the 13-item knowledge test show that respondents in 2007 got 7.6 items correct out of 13, and 7.8 items correct out of 13 in 2011, a slight improvement. About one in 10 respondents in both 2007 and 2011 rated their own knowledge of land restructuring and land use rights as "very good," and another quarter rated their knowledge as "somewhat good." One indication of progress in knowledge is that the number who said they had "no knowledge" of land restructuring declined from 30.1% in 2007 to 17% in 2011. Most moved to the "not very good knowledge" category. Results are shown in Table 3-11.

Table 3-11: Percentage of farmers self-rating their knowledge of land restructuring.

	No knowledge	Not very good knowledge	Somewhat good knowledge	Very good knowledge
How would you rate your own knowledge of land restructuring?				
2007	30.1	28.6	29.0	11.1
2011	17.0	47.8	26.6	8.0

Source: World Bank and USAID (2008); World Bank (2011)

Respondents also were asked to indicate how much information they sought on land restructuring and land use rights from mass media, meetings and seminars, discussions with local leaders, and conversations with neighbors or members of one's own household. Results show that the number of information sources used has increased from 3.8 in 2007 to 4.2 in 2011, an indication that farmers are seeking more information from a wider array of sources about this

topic. A total of 23.3% of respondents in 2007 reported no use of any information source (15.2% of men and 37.1% of women), while it was 21.9% in 2011(14.7% of men and 32.5% of women). This indicates that although most farmers are receiving information from multiple sources, slightly more than one in five has no source of information. Among women, almost one-third lack any sources of information about land restructuring.

A greater share of farmers rate barriers and incentives to farm restructuring as “very important”

In order to assess barriers to restructuring farms as well as incentives, farmers were asked to rate a number of reasons why farmers would not want to restructure or would want to restructure. Percentages of those who said the reason was “very important” in 2007 and 2011 are shown in Table 3-12. Results indicate that for seven of the 10 barriers, farmers in 2011 were more likely to say the barrier was “very important” than they did in 2007. On the other hand, they also were more likely to rate each of four incentives to restructure as being “very important” than in 2007. It may be that experience or additional information on problems and rewards is more important now. Especially notable was a nearly 20% increase in “lack of experience in farming” as a reason for not restructuring. A third of farmers also now say that one reason for not restructuring is that one would not be able to have free choice to plant crops on restructured land. On the incentives side, however, almost two thirds (64.1%) indicated that freedom to plant the crop of one’s choice would be a very important reason to restructure. The percentage perceiving that one can make more money by restructuring was a very important reason for 57.3%, up from 45.1% in 2007. Obtaining secure rights and ability to farm independently were two other incentives that witnessed large increases in the percentage of farmers rating them as very important.

Respondents on farms with more than 25 member/workers (usually farms that have not yet been restructured), were more likely to rate 8 out of 10 barriers as “very important” than those who work on farms with 25 or fewer farmers. This is due in part to the fact that those on larger farms have not yet actually gone through the process. However, qualitative interviews also showed that many collective farm heads, who benefit from their current status, have actively discouraged farmers from petitioning to restructure by warning them of barriers to farming if they do.

Table 3-12: Percentage of farmers indicating barriers or incentives as “very important” reasons influencing the decision to restructure

Issue	2007 Very Important Reason	2011 Very Important Reason
Barriers to Restructuring		
Lack of access to machinery necessary to cultivate the land of the dekhan farm effectively	49.0	52.8
Lack of experience and confidence in cultivating land	24.5	43.7
Poor access to irrigated water, irrigation equipment or high cost of irrigation	44.9	41.5
Lack of cash or credit to buy inputs, chemicals or seed necessary to farm independently	44.5	38.8
Debt attached to the land is too high. (Qualitative interviews indicate that to farmers, “debt” also includes taxes, utilities, etc.)	24.6	33.4

Issue	2007 Very Important Reason	2011 Very Important Reason
Costs of going through the process of establishing an individual/family farm would be too high	29.4	32.6
Lack of free choice to plant what you want	19.5	31.4
Fear that taxes would be too high or that they might increase	25.5	30.2
Lack of market or a way to sell what is produced on an individual farm plot at a fair price	18.5	27.3
Amount of irrigated land is too small and problematic to divide into tiny parcels	27.5	26.9
Incentives to Restructure		
Get secure rights to a piece of land that could then be passed on to their wife/husband or children	49.3	66.9
They could farm independently	34.5	64.7
Freedom to plant whatever they want	37.1	64.1
Make more money from independent farming	45.1	57.3

Source: World Bank and USAID (2008); World Bank (2011)

Qualitative interviews also identified barriers preventing farmers from initiating restructuring procedures to establish family farms. Two main types of costs are included as barriers to establishment: 1) one-time payments for assets, namely trees or plants classified as such, e.g., vines, on the land parcel, and certificate issuance; and 2) transaction costs comprising travel, non-official payments and the opportunity costs of the time needed to process applications. A common complaint seen among the qualitative findings was that the traditional land registration process did not work. Farmers still have not received certificates after 4-5 years, or there are so many offices to visit and mistakes to correct that the process is still incomplete. A second barrier concerns tax disincentives associated with farmland restructuring. Disincentives include payment of the social tax, and the transaction costs of travel and the opportunity costs of time needed to make monthly payments. Participants in focus groups and interviews also spoke of difficulties arising from lean cash periods due to the seasonality of agriculture and the time taken to process several different tax payments.

More farmers are considering strategically how to use their land

In both 2007 and 2011, farmers were asked the same questions to assess whether or not they had thought strategically about management of their land. Results indicate that there was a slight increase in the percentage making a business plan for their land, and an increase in both the percentage who have leased their land to others or rented land from others, and the proportion who have seriously considered doing either of these things. These results (Table 3-13) provide an indication that farmers are considering ways in which they can use their land most effectively. In 2011, farmers were asked a series of specific questions about the types of investments they made, but these were not asked in 2007. These are presented in Chapter 5.

Table 3-13: Percentage of farmers in 2007 and 2011 who have considered or made strategic decisions concerning their land

Question	2007 % saying yes	2011 % saying yes
Have you or members of your household prepared a business plan for your land?	14.9%	15.8%

Question	2007 % saying yes	2011 % saying yes
Have you or members of your household ever leased the land you cultivate to others?	2.6%	7.1%
Have you or members of your household ever rented land from others?	5.3%	6.8%
If you have not leased, have you or members of your household ever given serious thought to leasing your land to others?	6.9%	12.9%
If you have not rented, have you or members of your household given serious thought to renting land from others?	8.7%	17.0%

Source: World Bank and USAID (2008); World Bank (2011)

Farmers diversify their crops as they make independent farm decisions

One other indicator of a change that might result from land restructuring concerns changes in the crops planted. Rather than planting the same crops each year as was the case under the Kolkhoz quota system, land restructuring permits farmers to change crops to take advantage of market or production changes. Table 3-14 compares crops respondents reported growing on their farms in 2007 and 2011 for the eight repeated raions. Comparisons indicate that cotton production has increased in Zafarobod, Qabodiyon and Konibodom. (This was confirmed by focus group interviews in Zafarobod of family farmers indicating that they placed more land in cotton to take advantage of good cotton prices). Data from Konibodom should be interpreted with caution, because many of the 2007 respondents there were either unable to or did not provide detailed production information. One important conclusion from this table is that in most cases farmers appear to be diversifying – growing more types of crops – on their lands. (An exception is Faizobod). This is shown by the increases that have occurred across categories. Diversification would help protect farmers against diseases or poor market conditions for any given crop. The increases shown for onions and tomatoes were also reflected in carrots and other vegetable crops (not shown). Variation in orchards is most likely due to the fact that not all farmers have orchards, and farmers interviewed in 2011 were not necessarily the same as those interviewed in 2007.

Table 3-14: Percentage of farmers in 2007 and 2011 reporting that they grew each type of crop

District	Cotton		Wheat		Potato		Onion		Orchards		Tomato	
	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011
Zafarobod	75	99	51	55	1	0	12	28	0	1	1	3
Pandjakent	1	0	52	39	12	46	4	17	6	14	2	29
Konibodom	18	87	3	63	1	10	3	56	1	64	3	24
Yovon	53	40	78	65	2	4	24	34	3	0	23	24
Qabodiyon	45	92	24	79	2	31	8	22	6	4	3	26
Faizobod	1	0	71	77	6	9	9	4	33	4	6	3
Rasht	2	0	55	68	40	80	5	8	19	45	8	18
Vanj	1	0	84	79	67	85	31	77	35	20	16	48

Source: World Bank and USAID (2008); World Bank (2011)

Average total income increased due to more farm sales income, but the percentage with migrant remittances has declined

Analysis of various sources of income suggests that average income has increased from 2007 to 2011. However, caution in interpreting this data is urged since many farmers in 2007 were living on Collective Dekhan farms and were not knowledgeable about their farm income, and secondly

because of the large variation in reported income data. Perhaps more important than the income figures are the percentages of farmers who report receiving any income from each source. Table 3-15 indicates a reduction in the percentage of farmers who receive migrant remittances from half of farmers to about 41%. Since this is a major source of income, this loss of revenue would especially affect those who have low farm income. In contrast, there has been an increase in reported farm income as well as wages for agricultural labor. As noted earlier, the large increase in farm income is due in part to the fact that the majority of respondents now live on family farms and know income figures. In 2007 many respondents reported zero farm income because they either didn't know or didn't receive any cash income directly from farm sales. Part of the increase is also due to the fact that farmers are actually receiving cash income (rather than just in-kind distributions) for their farm work. Although much of the increase in total income is due to the fact that farm income is now reported, increases are also reported from wages, private businesses, migrant remittances, and pensions. The high standard deviation indicates considerable variation in reported income of all types, and especially from farm sales. A more detailed examination of income that takes into account some of this variation is provided in Chapter 4.

Table 3-15: Percentage of farmers and average income from each source for 2007 and 2011. Income figures are in Somonis. Averages are for all 800 cases in each year. Standard deviation is in brackets.

Farm sales income	Wages	Private Business	Migrant Remittances	Pension	Social Allowance	Other	Total
2007							
3.2%	31.0%	21.0%	49.5%	32.5%	4.2%	7.2%	
127	113	254	1354	163	32	107	2150
(103)	(282)	(931)	(2744)	(381)	(211)	(526)	
2011							
48.6%	57.7%	18.1%	40.9%	33.0%	2.2%	11.2%	
3171	1408	734	2283	516	12	211	8335
(9757)	(2669)	(2791)	(4892)	(979)	(130)	(5581)	

Source: World Bank and USAID (2008); World Bank (2011)

The averages in Table 3-15 understate income since many report no income from that source. Table 3-16 shows a different picture where averages are from only those who report positive income for that category. Both the mean and the median are provided. The mean represents the total cash income divided by the number of farmers who report any income from that source. The median represents the midpoint of income received. For example, in 2007, the mean amount of migrant remittances received by a farmer who reported any cash income from this source was 2736 Somoni, and the median was 2000 Somoni. In 2011, the mean amount received from migrant remittances for those who received any income from this source was 5586 Somoni with a median of 4500 Somoni. This indicates that for those who received migrant remittances, income from this source increased substantially from 2007 to 2011.

Table 3-16: 2007 and 2011 mean and median cash income by source for farmers who received any income from that source

	Farm sales	Wages	Private business	Migrant Remittances	Pension	Social allowance
2007 Income						
Mean	127	369	1212	2736	501	764
Median	100	217	600	2000	360	550
2011 Income						
Mean	6526	2439	4054	5586	1565	517
Median	2575	1440	2100	4500	1200	250

Source: World Bank and USAID (2008); World Bank (2011)

Despite the increase in farm income, the percentage of farmers who reported total farm-income dependence declined by 10% between 2007 and 2011. The percentage of farmers for whom farm income is not a significant source of income increased by 10% during the same time period. Wages from off-farm labor, migrant remittances, and pension income provide non-farm sources of income for many respondents. Results are shown in Table 3-17.

Table 3-17: Percentage of farmers in 2007 and 2011 reporting that farming is their only source of income

	2007	2011
Farming is the only source of income	39.4	29.4
Farming is a significant source of income; however, there are other income sources as well	45.5	48.9
Farming is not a significant part of household income; there are more important sources	9.9	19.6
Don't know	5.3	2.1

Source: World Bank and USAID (2008); World Bank (2011)

In addition to crops, many farms also have livestock, especially cows and poultry, and in addition to providing milk or eggs, livestock also function as an insurance policy that can be sold to generate cash in hard times. Table 3-18 shows that while the proportion of households reporting having a cow increased slightly over the past four years, other types of livestock showed a decline. Possession of cows increased from 85.5% to 87%, while the average number increased from 1.98 to 2.61.

Table 3-18: Percentage of farmers having various types of livestock and the average number of livestock per farm household¹

Livestock held	2007		2011	
	% having any	Average number	% having any	Average number
Cows	85.5	1.98	87.0	2.61
Sheep	46.0	2.40	27.0	2.44
Horses	4.4	.05	2.9	.04
Donkeys	31.0	.37	26.7	.31
Goats	41.9	2.32	33.9	1.91
Poultry	57.1	5.34	47.4	4.71

Source: World Bank and USAID (2008); World Bank (2011)

1 – The average is calculated for all 800 farmers.

Increase in the index of household possessions shows farm households have disposable income to spend for mobile phones, color TVs, and cars

Farmers in 2007 and 2011 were asked whether or not they possessed each of 18 different types of household possessions. This was used as a rough indicator of household wealth. If farmers are accumulating possessions of a non-essential nature, this is a strong indication that they have disposable income. Results indicate that farmers have increased the number of household possessions they have from an average of 4.9 to an average of 6.2. Specific results shown in Table 3-19 indicate that mobile phones have surged from 25% of households to 86.6%, color TVs increased from 55.8% to 85.9% of households, and cars increased from 25% to 39.3% of households. Qualitative interviews indicate that the major source of cash to pay for these household possessions is migrant remittances.

Table 3-19: Percentage of households in 2007 and 2011 with each type of possession

	2007	2011
Carpet	83.9%	93.4%
Mobile phone	25.4%	86.6%
Color TV	55.8%	85.9%
Tape/DVD player	52.1%	72.8%
Sewing Machine	47.9%	54.9%
Car	25.0%	39.3%
Fridge	28.0%	33.3%
Radio	46.9%	32.6%
Bicycle	20.1%	29.1%
TV Satellite	7.6%	26.8%
Black and White TV	49.5%	16.3%
Power Generator	4.0%	12.4%
Washing Machine	15.8%	10.1%
Tractor	7.5%	8.6%
Landline phone	10.6%	6.9%
Lorry	5.3%	6.6%
Air Conditioner	3.6%	4.3%
Motorcycle	4.1%	1.9%

Source: World Bank and USAID (2008); World Bank (2011)

Qualitative focus group results from four raions indicates the diversity of restructuring activities

Zafarobod (Lowland Raion)

Farm head: It would take another revolution to go back [return to Soviet-style farming]. That's not going to happen.

Young farm head: Agriculture has a future if you have water and work hard. Life now is better than it was on the Sovkhoz. I can choose what to plant. I get the harvest. I am king – I do what I want.

Farmer: Only 10 farms out of 100 are really prospering here.

The transition from Collective dekhans farms to family farms has progressed more rapidly in Zafarobod, a lowland raion, where 89% of farms are perceived to be restructured into family

farms. An excellent cotton harvest last season (2010) along with high cotton prices increased interest in creating family farms out of existing Collective Dekhan farms or subdividing existing family farms further into smaller farms. A further driver of farm restructuring appears to be the lack of resources found on many Collective Dekhan farms.

In Zafarobod, the focus of attention has moved beyond restructuring itself to problems associated with how to make the newly restructured farms viable. This includes providing access to credit, fertilizer, diesel fuel and tractors, and most important, water. Some of these challenges require individual training and management; others may require coordinated action (water use associations, collaboration to rent or buy tractors, etc.).

The transition to family farms has brought rewards for farmers who planted cotton last year, and were free to sell at a high price on the market. They reported that for the first time in years, they made enough money from their crop to pay down their debt and even buy some cars. The good results last year encouraged farmers to plant cotton intensively this year in hopes of continued good profits. A total of 55% of land is now planted to cotton in this region. Another substantial portion of the land is used to grow fodder for livestock. Several focus group members with family farms took out loans secured by their houses and cattle in order to get a cotton crop in this season. However, this strategy has created substantial vulnerability for these farmers. They have leveraged their assets heavily for cotton, and now find that there is a serious water shortage in the area. In fact, some may face no yield if water is not provided soon. Focus group members were unanimous in agreeing that the lack of water is the most pressing problem in Zafarobod. A crop failure would be devastating for these farmers, since it would mean that their cattle and even their houses would be sold to pay back loans for a crop that did not yield. Collective Dekhan farms also have debt problems that would be worsened by a crop failure. The difference, however, is that it is the collective's debt, and would not result in members' loss of their cattle or houses. The main safety net for family farmers is migrant remittances from Russia.

Konibodom (Lowland Raion)

Unlike Zafarobod, where substantial restructuring has occurred, survey data shows neighboring Konibodom still has most of its farms as Collective Dekhan farms (73%) with 25% family farms. Focus group interviews with two groups of Collective dekhan farm women found that there have been changes since 2007 in how the Collective Dekhan farms operate. Rather than working as an overall team with responsibilities for the whole farm, they now have specific areas assigned to them, and when they complete their work on their assigned areas, they can go home. Both focus groups consisted of women who had very low levels of knowledge of either possible farm types or how they might restructure their farms. They reported that farm heads actively discouraged them from considering petitioning to restructure their farms, and the women themselves were not very much in favor of further restructuring. Several said they would favor a return to Soviet-style farms, but they acknowledged that this is not likely to happen. Ignorance of procedures to restructure, a fear of retribution by farm heads who might still control access to water and land after restructuring, and an absence of labor as a result of many husbands working in Russia were important factors in decisions not to restructure. One woman said she was told by her farm head that if she petitioned to restructure: (1) she would not receive just one piece of land – she would receive some good land, some saline soil land, some with apricot trees, etc. (one was told she would receive six different pieces of land); (2) It takes money to pay the taxes and costs of

fertilizer and inputs if one is independent. Most women in the focus groups believe that they are better off by staying on the Collective Dekhan farm. They don't want to challenge the farm head, and they don't want the responsibility of having to make all the decisions and pay all the taxes, electricity, etc. Under the current arrangement, they get half of the profits and the farm head gets the other half. Out of this, the farm head pays for electricity, taxes, etc. Women know that the rights that they have to land and to their apricot trees can be passed on to their children.

The World Bank-financed LRCSP is active in this raion. However, a local NGO advising farmers about land restructuring said that the LRCSP project was not issuing certificates to farmers in the NGO area, although it was issuing certificates elsewhere in the raion. The NGO staff said they hoped that LRCSP would begin issuing certificates directly to farmers in their area. The women interviewed in two focus groups in the area said restructuring took a very long time and was very expensive. When they said this, they were referring to the traditional process of land restructuring that goes through the local hukumat and land committee, not the LRCSP project procedures. The local NGO confirmed that the traditional hukumat/land committee procedure is slow and expensive.

Unlike Zafarobod, where farmers reported incomes that in a good year could help buy a car, there was wide agreement among the women in Konibodom that migrant remittances today constitute a very important source of income for their households. In fact, these remittances are seen as one of the only ways they can accumulate enough wealth for a wedding, a car, or a house. Farming on a collective farm does not provide that kind of income. One woman estimated that her household gets 10%-20% of its income from farming, and 80% from migrant remittances. When asked why she still farms, she said it is important for her to make a contribution to household income. Migrant remittances serve as an important safety net if there are agricultural problems during a season. These remittances appear to be greatly preferred over bank loans, which are not common and are seen as involving considerable paperwork and risk. The great majority of households represented in the focus groups had husbands or sons that were working in Russia. The NGO estimated that 23,000 people from Konibodom are now working as migrant laborers in Russia.

There appears to have been a substantial decline in the numbers of shareholders who are actually working on Collective Dekhan farms over time. In one case, a woman estimated the number working has declined from 147 to 91. In another case, the estimate was a decline from 70 to 45. In a third case, it declined from 192 to 120. These declines have been due in large part to men leaving for work in Russia. However, in some cases women no longer are able to or choose not to work. Sometimes this is due to sickness or becoming a pensioner. Sometimes women want to spend more time raising children. There are different arrangements across farms about how to handle departures, but there was widespread agreement that the departures are not reducing agricultural production or crop selection. In the population in general, women constitute 63% of the population in the area, i.e., excluding the labor migrants.

Faizobod (Upland Raion)

Faizobod is an upland area in the RRS region. Farmland restructuring began in this raion in 2004, and only one Sovkhoz seed production farm remains from the Soviet era. Other farms have been restructured as 23 collective farms or as family farms. Survey results showed 58% of

respondents were from family farms. Wheat is the major crop in this area, and there is limited diversity of crops grown in the area. The head of the agriculture department indicated that due to low soil quality and windy conditions, there is low demand for further restructuring. Farmers noted that water shortages and climate variability were additional serious problems in the area. Local officials said that on many family farms, lack of access to minerals and equipment resulted in low yields. Several suggested that Collective dekhon farms – due to larger size and better organization – were better able to gain access to tractors and other equipment needed to farm, while this was a problem for smaller family farmers.

Respondents in general are aware that restructuring has gone on, and that it involves getting rights to land. However, most say they did not and still do not understand many of the important details. One noted that she was not aware in the beginning that she and her relatives could pool their land request to get a larger single piece of land. Instead, she and others got very small scattered plots that are difficult to farm. Officials said that in the beginning there was a rush for land restructuring, and the existence of buildings and the needed technical base were not taken into account. In early restructuring, only shareholders working on the land were given land rights, but during a second phase, those in villages also got rights to land.

Much of the farm labor is carried out by women, although men frequently help with cultivation and other mechanical tasks. Many men are now working in Russia, and migrant remittances are an important source of household income. Those with fertilizer and access to water say that they can get the wheat they need from their land, but few said that agriculture was very profitable in the area. Most said that to buy cars and other expensive items, money from some other source is needed.

One other problem is the social tax, which must be paid by all those who gain rights to land. In a time when farmers lack funds to buy needed inputs for their land, it is very difficult to pay the social tax, which is collected from all those who have rights to a piece of land regardless of the number of months they might work. The raion head of agriculture said that the raion has closed 22-23 family farms by farmer request as a result of the social tax. The head suggested that farmers be required to pay the social tax only when they receive income for working on the farm.

Several farmers suggested that officials were not very supportive of restructuring farms into family farms because they lose control over farm operations. However, the head of the land committee says he has banners in his office that inform people about each type of farm that can be created. In his view, one of the problems is that people lack enough education and agricultural training to make good decisions. In his view, the major problems in the area are not due to restructuring, but to a lack of water, seed and tractors. He estimated that of the 3860 hectares of land under “irrigation,” about 1,600 don’t actually get fully irrigated.

Farmers in Faizobod generally agreed that they can plant what they want. But as one respondent noted, “Only wheat can be grown on this land.”

Pandjakent (Upland Raion)

Pandjakent is an upland raion located at the south end of Sughd region. There are 96 Collective Dekhan farms and 978 family farms in the raion, according to the chair of the land committee.

The work of restructuring has been divided between the land committee members and the World Bank-financed LRCSP. Survey respondents included 65% from Collective Dekhan farms and 35% from family farms. A total of 93% of surveyed farmers are working on farms with 25 or fewer workers. The World Bank, DFID, and German Agro-Action are three international organizations providing information and assistance relating to farm restructuring activities in the area. Local leaders estimate that 70%-80% of the farm work in this raion is done by women.

Officials and farmers in Pandjakent are concerned about a lack of machinery, especially for those on small farms, and a lack of water caused by both technical problems such as pumps that are too old or lack electricity, and allocation problems.

There is widespread recognition that farmers do not have detailed legal or procedural knowledge about land restructuring. They have heard that it is possible, and they also know that lands are supposed to be inherited. A Collective Dekhan farm chair said shareholders know they have to pay the land tax, the water fee, and the pension fund contribution, and that they may do what they wish with their crop. However, most do not know details about how to start the process or specifically what rights and choices they have.

The land committee head also confirmed the complexities of restructuring from his own point of view. He said his staff of six consists of individuals who lack significant agricultural training, and they also until recently lacked computer skills necessary to handle requests efficiently. He estimated that in his office, 20%-30% of applications for certificates confirming rights to land are rejected due to technical mistakes and other problems.

Several mentioned that farm heads at Collective Dekhan farms do not encourage farmers to break up their farms. This was confirmed by some farm head interviews in which it was argued that restructured farms are too small to warrant installation of irrigation pumps, and that most farmers who were not already heads of farms lack experience and education necessary to run a farm. A local leader estimated that only 20% of farmers who previously worked on kolkhozes and sovkhoses have good farming experience. They also argued that costs are too high to operate a restructured farm. A Collective Dekhan farm head provided this example:

I have 5 shareholders in my family, and the total share of my family is 0.45 ha. Let us assume that I create a Family Dekhan farm with 5 shareholders. Since there are 5 of us working on the land, we are supposed to pay social tax for 5 persons. At a rate of 15 Somoni per person and payable for 7 months a year, the social tax per person per year will be 90 Somoni and 450 Somoni for 5 persons. If we add the land tax and the water fee on top of that plus time and travel costs, the total expenses for 0.5 ha will add up to 1000 Somoni. How much profit can one make by spending 1000 Somoni on 0.5 ha of land? That is why people are not willing to create a Family Dekhan farm.

Collective dekhan farm heads also argue that being in a Collective farm permits farmers to cooperative more fully together. Some focus group members still support the economic model of farming from the Soviet Union. They point out that farm leaders were responsible then for solving problems. Now farmers are responsible, and there also are more local officials one has to deal with.

On the other hand, officials acknowledge that farmers on family farms have higher incomes and rights to land that can be passed along to heirs. During focus group interviews, farmers said that having rights to a piece of land provides an incentive to work harder and strive to make a profit. One said:

When you are the owner of the land, the way you treat the land also changes. You don't have to wait for a chairman or foreman to come and shout at you to go to the field and work. If you own your own land, you will try to plant maize after harvesting your wheat. You will be encouraged to work on the land. If the land is kolkhoz, you will come to work today and not the next day.

Several focus group respondents in Pandjakent emphasized the importance of being able to make planting decisions themselves. They indicated that they are planting more crops with higher productivity now.

Although much attention has been focused on problems with the land committee office, actions of individual farmers can also complicate restructuring. An interview with a woman who created her own family farm included the following:

When the kolkhoz system collapsed, each kolkhoz allocated household plots to the families who had no land. When I went there and told them that I had five children, I was given 0.06 ha of land and I took another unauthorized 0.06 ha of land. One day, a land management official from Pandjakent came and asked me why I took that land. I said that I was right because I had five children and no man in the family. Why were rich men given land and I wasn't? I am also a citizen of Tajikistan. I told him I am not giving the land back even if you take me to court. I threatened to burn his papers and documents. Since then, nobody has harassed me. I built a house for my son on the land, because if I keep silent like a fool, they will use me like a donkey.

There is at least anecdotal evidence that informal land use management practices are emerging. When a farmer cannot take care of the land, often relatives will take over, farming the land and paying taxes (including the social tax). They take the crop for themselves. If farmers with the original rights decide to take over the land again, this can occur. In some cases, there is a payment for use of the land.

Chapter 4: Freedom to Farm

The concept of “Freedom to Farm” is a concept having to do with the ability of those working the land to make the key agricultural decisions regarding that land. The hypothesis is that land restructuring is designed to free farmers to make their own decisions about the plots of land to which they have long term rights rather than being told what to do by local authorities to meet a quota, or by a farm head as a part of a centralized production strategy. If Freedom to Farm is present, farmers must accept the risks and rewards that result from making their own key decisions about what to plant, where to buy inputs (and which ones to use), how and when to access credit, and where to market the harvest. Embedded in Freedom to Farm is the belief that resulting decisions will lead to higher productivity and income for farm households since farmers have a great incentive to increase production and lower costs for their own direct benefit. Freedom to Farm is included in the Action Plan on Reforming Agriculture which is part of the July 2, 2009 Government Resolution 406, and is contingent on accelerated farmland restructuring. This chapter examines Freedom to Farm in the study sites and contributes to the assessment of this measure.

Earlier studies, including the baseline KAP study (2007), showed that despite restructuring, some farmers—and especially those growing cotton—were not free to make their own decisions about what to plant or what inputs/financing to use. For this reason, special attention was placed on this in the 2011 study. All 1800 farmers were asked five questions assessing freedom to farm for general agriculture. Those growing cotton were asked an additional five questions to assess freedom to farm just for that crop.

Results indicate that for non-cotton crops, about two-thirds of respondents indicated that they either “strongly agree” or “somewhat agree” that they can make independent decisions. Another 10% didn’t know. For cotton, more than 50% also either “strongly agree” or “somewhat agree” that they can make independent decisions. However, it is important to note that about one-fourth did not agree that they were free to decide, and the remainder said they didn’t know.

Table 4-1. Percentage of farmers agreeing or disagreeing with “freedom-to-farm” questions for both regular crops and cotton

Issue	Don’t agree at all	Don’t agree very much	Agree somewhat	Strongly agree	Don’t know
For crops other than cotton					
In most respects, farmers in this region truly can use the land as they wish.	7.8	12.3	24.1	44.9	10.9
In most respects, farmers in this region are free to choose how much land to allocate to different crops	6.3	12.3	27.6	42.3	11.5
In most respects, farmers in this region can market their products in any way they choose	6.1	8.0	27.6	47.6	10.4
In most respects, farmers in this region can buy seed, fertilizer, pesticides or other inputs from	9.3	9.3	29.3	36.6	15.6

Issue	Don't agree at all	Don't agree very much	Agree somewhat	Strongly agree	Don't know
whomever they wish					
In most respects, farmers in this region can choose any financing method they wish for inputs or other needs	9.6	8.8	30.3	34.3	17.1
For cotton farmers (n=755)					
Farmers are free to choose how much land to allocate to cotton	13.9	10.7	19.8	39.3	16.3
Farmers are free to choose where to gin the cotton	12.5	13.5	23.0	32.6	18.4
Farmers are free to buy seed, fertilizer, pesticides or other inputs from whomever they wish	10.8	12.6	23.2	33.4	20.0
Farmers are free to choose any financing method they wish	9.3	10.1	23.9	33.3	23.3
Farmers are free to decide when to collect cotton stalks	12.0	11.1	17.2	40.9	18.8

Source: World Bank (2011)

Farmers who say that they lack “freedom-to-farm” for cotton are concentrated in several raions. As the table below shows, Hissor and Konibodom have higher percentages of farmers who either “strongly disagree” or “don’t agree very much” that they are free to choose, while Djabbor Rasulov, Zafarobod, Shahrituz, Yovon and Panj report much lower percentages.

Table 4-2. Percentage of farmers who either “strongly disagree” or “don’t agree very much” that they have free choice concerning decisions relating to cotton production by raion

	Land Allocation	Where to gin cotton	Buying inputs	Financing	Collecting stalks
Hissor	48	61	59	62	45
Konibodom	53	45	34	31	38
Djabbor Rasulov	20	16	34	11	2
Zafarobod	11	16	11	13	19
Shahrituz	28	29	34	25	31
Yovon	12	23	11	10	36
Panj	24	23	23	19	24

Source: World Bank (2011)

For conventional crops, most men and women believe they have freedom to farm. For cotton (Table 4-3), 45% of men said they “strongly agree” that they decide themselves how much cotton to plant, compared to 32% of women. Across a range of questions, men believe they can make decisions themselves for cotton, while fewer women do.

Table 4-3. Percentage of men and women saying they “strongly agree” that they make the decisions about various aspects of cotton production

	Men %	Women %
Free to plant or not plant cotton on any land	45	32
Free to choose where to gin the cotton	39	25
Free to choose where to buy inputs	39	27
Free to choose the financing method	40	25
Free to decide when to collect cotton stalks	43	38

Source: World Bank (2011)

Those on farms with 25 or fewer members and those on upland area farms are more likely to say they take the lead in making planting decisions

One other indicator of “freedom to farm” is who takes the lead in planting decisions. As expected, farmers themselves are more likely to say they take the lead in planting decisions on farms with fewer than 25 members (usually family farms). Farmers in upland areas are also much more likely to say they make farming decisions than farmers in lowland areas where cotton production predominates. On farms with more workers or lowland areas, the farm head takes the lead in making planting decisions.

Table 4-4. Percent of farmers saying they take the lead in making planting decisions by upland/lowland areas and number of workers on the farm.

	You and other household members	Head of dekhhan farm	Local authorities	Other	Don't know	Total
<=25 members	61.6	31.3	4.5	.1	2.6	1392
>25 member/workers	15.1	69.8	8.7	0	6.4	172
Lowland	33.7	56.4	5.6	.6	3.8	900
Upland	76.7	16.4	4.1	0	2.8	900

Source: World Bank (2011)

Over time, farmers more strongly agree that they have “Freedom to Farm”

One important shift from 2007 to 2011 is in farmers’ perceptions that they have “freedom to farm.” In both years, farmers were asked to agree or disagree with this statement: “In most respects, farmers in this region can truly use the land as they wish.” Results shown in Table 4-5 indicate that the percentage strongly agreeing with this statement almost doubled between 2007 and 2011. The percentage saying they don’t agree at all, or don’t agree very much with the statement, declined from 31% in 2007 to 22% in 2011.

Table 4-5: Percentage of farmers from 2007 and 2011 who agree that “in most respects, farmers in this region can truly use the land as they wish.”

	2007	2011
Don't agree at all	14.6	6.0
Don't agree very much	16.8	15.8
Agree somewhat	34.1	23.6
Strongly agree	27.8	49.5
Don't know	6.8	5.1

Source: World Bank and USAID (2008); World Bank (2011)

Chapter 5: Farm Operations

Chapters 3 and 4 addressed progress in restructuring and land use rights in Tajikistan as well as Freedom to Farm. The focus now turns to examining the operation of farms and farm households. This chapter examines several aspects of farm operations that can have an important impact on the livelihood security and vulnerability of households. Factors examined include:

- Effective use of various sources to get information on how to improve agricultural production;
- Investments farm households have made in irrigation systems, mechanical equipment, fences, buildings, etc. that build up farm capital and increase production;
- Adoption of environmental practices that save water, conserve and protect the soil, and increase the sustainability of agricultural production;
- The mix of crops grown, and the extent to which restructured farms plant a more diverse set of crops to provide protection from pests/diseases and changing market conditions;
- Rural household income from farm production and other sources of income that can provide capital or protection in the event of crop failure or low prices;
- Savings in the form of cash, livestock, or household possessions that would allow a household to survive an economic downturn, poor agricultural prices, or family emergency.

Use of information sources for agriculture

The ability to gain regular access to information to help make general farming decisions is an important factor in a farming-household's capacity to respond to risks and problems. Those with few sources or poor quality information cannot know the full range of agricultural choices available to them, and are constrained in their ability to make informed decisions. More than three-fourths of farmers use at least other farmers as an information source. Upland farmers are much more likely to use hukumats as an information source, while lowland farmers are more likely to use most other sources. Farms with fewer than 25 members are more likely to use Dekhan farm associations as an information source, while those on larger farms are more likely to use an individual business owner. Women are as likely as men to use other farmers, the hukumat, and Dekhan farm associations as sources of information, but less likely to use government/extension or businesses as sources. Detailed results of the use of sources can be found in Chapter 6, Table 6-3.

Vocational and higher education training in agriculture

General education and specific training in agriculture would be expected to enable farmers to make better farming decisions and carefully consider alternatives brought about by farm restructuring. Table 5-1 shows that women lag men substantially in general education. A total of 44.6% of men have general education beyond completion of the secondary level compared to 11.1% of women. For farms with 25 or fewer members, education levels are bimodal, with more farmers not completing secondary education, but also more with higher education than workers on farms with more than 25 member/workers.

Table 5-1. Percentage of men and women completing general education

	Primary incomplete	Secondary incomplete	Secondary complete	Secondary technical	Secondary vocational	Higher incomplete	Higher complete	Total
Men	2.9	9.0	43.6	15.6	8.6	3.5	16.9	1127
Women	1.3	20.5	67.0	1.8	4.6	1.0	3.7	673
<=25 members	2.5	14.7	48.6	10.2	8.0	2.8	13.2	1392
>25 member/workers	.6	5.8	68.6	9.9	5.8	2.3	7.0	172

Source: World Bank (2011)

Table 5-2 shows farmers with specific training in agriculture by sex, lowland/upland and number of farm members. The table shows that male farmers, upland farmers, and those on farms with 25 or fewer members are much more likely to have specialized training in agriculture.

Table 5-2. Percentage of farmers with specialized agricultural training by gender, lowland/upland and number of farm workers

	Vocational Agricultural Training	Higher Education in Agriculture	No specialized training
Male	19.3	5.1	75.5
Female	7.9	2.2	89.9
Lowland	6.3	2.1	91.6
Upland	23.8	6.0	70.2
<=25 members	17.6	4.6	77.8
>25 member/workers	7.6	2.9	89.5

Source: World Bank (2011)

Investments in farm improvements, environmental practices and crop diversity

Farmers can strengthen their productive capacity and reduce vulnerability by investing in farm improvements such as irrigation systems, machinery, or buildings. A second thing they can do to protect the sustainability of their land is to adopt environmental practices to reduce erosion, protect water resources, or enrich soils. Third, they can protect themselves against possible crop failure or low prices in one area by diversifying their farms to produce different types of crops. This study examined the extent to which farmers are doing each of these three things.

Slightly less than half of both lowland and upland farm households have invested in at least one of the five improvements listed (Table 5-3).

Table 5-3. Investments in farm improvements by lowland and upland households in the past two years

Investment	Lowland % investing	Upland % investing
Irrigation systems/pumps/canals, etc.	33.1	27.6
Fences	27.1	24.1
Tractors or other mechanical equipment	14.3	13.4

Investment	Lowland % investing	Upland % investing
Construction of buildings	8.6	6.6
Purchase of horses or other animals to use for ploughing	4.7	7.4

Source: World Bank (2011)

Survey respondents were asked to indicate which of 11 possible environmental practices they have adopted. The list, along with the percentage of lowland and upland farmers who have adopted the practice are shown in Table 5-4. Results show lowland farmers are more likely to adopt water-saving practices such as drip irrigation and water harvesting ponds, while upland farmers are more likely to intercrop trees and crops, engage in pasture improvement, or use organic fertilizer.

Table 5-4. Percentage of lowland and upland farmers with some knowledge or very good knowledge, and the percentage adopting 11 environmental practices

Practice	Lowland Region Farmers			Upland Region Farmers		
	% some knowledge	% very good knowledge	% adopted practice	% some knowledge	% very good knowledge	% adopted practice
Planting trees or other permanent crops for fruits/nuts, etc.	30.7	17.1	61.9	27.6	27.3	65.8
Intercropping trees and crops	25.3	9.2	47.8	23.0	26.1	60.1
Organic fertilizer or other soil conditioners for your land	13.6	4.0	20.9	20.9	9.9	46.4
Pasture improvement	16.1	7.1	25.1	23.7	13.7	36.2
Windbreaks (trees, shrubs, etc.)	20.1	5.0	28.7	13.8	9.6	24.4
River bank stabilization and protection	16.4	3.8	21.9	15.6	9.2	24.1
Erosion control such as contour farming or terracing land	14.3	3.6	19.6	10.4	7.0	19.9
Use of integrated pest management techniques instead of pesticides	11.6	3.2	17.8	9.7	6.3	18.7
Water saving practices such as drip irrigation	17.8	3.7	29.6	14.8	4.3	15.1
Water harvesting or retention practices (catchments, ponds, etc.)	16.2	3.0	20.8	10.0	4.9	12.0
Installation of biogas, solar energy or hydro power	7.6	1.7	11.4	9.3	3.8	11.7

Source: World Bank (2011)

In order to compare all 18 raions for levels of investment in agriculture, crop diversity, and adoption of environmental practices, scores were created for each of the three. For farm investments, each farm investment in Table 5-3 was counted as one point. For environmental practices, each of the 11 practices in Table 5-4 was counted as one point. For crop diversity, each crop grown on the farm was counted. Table 5-5 shows the percentage of farmers in each raion that adopted any of the investment or environmental practices. For crops, the percentage of farmers with only one crop is shown. An “X” is placed in the column to indicate raions that scored higher than average for each of the three areas. A total score in the far right column is the total of above-average scores for all three practices. Results indicate that being in a lowland or upland area is not strongly associated with any of the three activities. Rather, there is substantial variability within both lowlands and uplands. Within each, there are some raions that have made substantial investments, have a diversity of crops, and adopt environmental practices. However, also within each are respondents in raions who have not done much in these areas. This suggests that other factors including raion administration, culture, and proximity to markets likely also play an important role. Of the raions in which CAWMP was active with support for sustainable land management, Tojikobod, Pandjakent, Kuhistoni Mastchoh and Vanj have overall scores that are above average with Danghara being the exception. Vanj is notable for its high scores for crop diversity and adoption of environmental practices.

Table 5-5. Percentage of farmers making any investment in agricultural productive practices and mean score of number of practices by raion; percentage of farmers with only one crop, average number of crops by raion; percent adopting any environmental practice and average number of practices adopted by raion

	Investments			Crop Diversity			Environmental Practices			Total above-average
	% with any	Mean score	“X” indicates above average	% with ONLY ONE	Mean Score	“X” indicates above average	% adopting any	Mean Score	“X” indicates above average	
Lowland Raions										
Hissor	32	.47		73	1.73		65	5.37	X	1
Djabbor Rasulov	18	.22		8	1.53		90	3.48	X	1
Konibodom	26	.43		6	4.00	X	77	2.33		1
Zafarobod	43	.88	X	12	2.38	X	69	3.75	X	3
Qabodiyon	28	.55		20	3.29	X	88	1.73		1
Shahrituz	51	1.11	X	9	2.91	X	73	2.97		2
Yovon	21	.33		7	1.89		56	1.02		0
Jilikul	90	1.6	X	61	1.72		92	3.25	X	2
Panj	90	2.3	X	21	2.03		78	3.58	X	2
Upland Raions										
Temurmaliq	29	.40		87	1.18		96	3.41	X	1
Faizobod	3	.03		74	1.04		50	.88		0
Danghara	30	.39		50	1.78		77	2.69		0
Rasht	76	1.08	X	17	2.50	X	100	3.04		2
Nurobod	72	.79		12	2.35	X	100	3.86	X	2
Tojikobod	39	.75		52	1.48		94	3.87	X	1
Pandjakent	97	2.17	X	34	3.25	X	100	4.81	X	3
Kuhistoni	59	1.25	X	75	1.20		67	2.16		1

	Investments			Crop Diversity			Environmental Practices			Total above-average
	% with any	Mean score	“X” indicates above average	% with ONLY ONE	Mean Score	“X” indicates above average	% adopting any	Mean Score	“X” indicates above average	
Mastchoh										
Vanj	21	.26		8	4.26	X	100	5.38	X	2
		.83			2.25			3.20		

Source: World Bank (2011)

Table 5-6 shows investments, crop diversity and environmental practice adoption by lowland and upland regions and by farms with 25 or fewer members or more than 25 member/workers. Results indicate that farms with 25 or fewer members have on average made a larger number of investments in their farm, and also have adopted a larger number of environmental practices. Lowland farmers have made slightly more farm investments, and are more likely to have more crops on their farms, while upland farmers have adopted more environmental practices.

Table 5-6. Percentage of farmers making any investment in agricultural productive practices and mean score of number of practices; percentage of farmers with only one crop, average number of crops; percent adopting any environmental practices and average number of practices adopted by lowland/upland and by whether or not the farm has 25 or fewer members

	Investments		Crop Diversity		Environmental Practices	
	% making any	Mean score	% with one crop	Mean score	% making any	Mean score
Lowland	44.3	.88	24.1	2.39	76.4	3.05
Upland	47.3	.79	45.1	2.11	87.1	3.34
<=25 members	48.1	.90	32.2	2.26	81.2	3.31
>25 member/workers	34.3	.61	15.7	3.25	83.7	2.89

Source: World Bank (2011)

Income sources and amounts for different farm types

Household income and savings are forms of financial capital that farmers have to provide for their families, invest productively or protect themselves in the event of an emergency. This includes farm and non-farm income sources as well as savings in various forms (cash, livestock, etc.). Farmers who have more income are less vulnerable, and those who have income from diverse sources can protect themselves in the event of a downturn in one area. Respondents were asked about income from the sale of farm products, wages for work on the farm, private business income (such as shop owners, sales of handicrafts, resale, and providing transport), migrant remittances, pensions, and social allowances. They also were asked about in-kind goods received instead of cash. As noted earlier, considerable variation was observed in reported income levels, and, furthermore, many farmers reported no income from particular sources. The following analysis presented in the Table 5-7 takes into account these findings, and lists the percentages of respondents with no income for each of the income categories. It also compares the average income by category that farmers have at the bottom 25% level, the median point (50%), the 75% level, and the 90% level. Examining these percentages makes it possible to compare respondents

on farms with 25 or fewer members to those on farms with more than 25 member/workers at various income levels. For example, results show that a larger percentage of respondents on farms with 25 or fewer members have private business income, and have larger average incomes at all levels. These farmers also have more in-kind income at every level except the bottom 25%. Respondents from farms with more than 25 member/workers are slightly more likely to have migrant remittance income, and the income they receive on average is larger. At the bottom of the table, analysis of variance (ANOVA) statistical test results are shown to indicate whether or not the results for the two types of farm member/workers would be considered to be significantly different at 95% confidence level.

Table 5-7. Income comparisons by respondents from the bottom 25% of the income distribution, the 50% level, the 75% level, and the 90% level.

	Total farm sales income	Wages	Private business	Migrant remittances	Pension	Social allowance	Other	Total cash income	In-kind income
Results for respondents from farms with 25 or fewer members									
% with no income from source	35.8%	42.0%	77.4%	61.9%	67.1%	98.5%	92.3%	2.4%	N/A ¹
Bottom 25%	0	0	0	0	0	0	0	2968	200
50%	1080	540	0	0	0	0	0	6100	400
75%	5000	2000	0	3000	840	0	0	12700	700
90%	11750	3600	3300	6000	1400	0	0	22250	2000
Maximum value	253000	35000	71000	90000	8400	8000	57000	255240	12000
Results for respondents from farms with more than 25 member/workers									
% with no income from source	58.4%	37.1%	87.6%	54.7%	71.8%	97.6%	88.2%	6.0%	N/A ¹
Bottom 25%	0	0	0	0	0	0	0	2000	200
50%	0	580	0	0	0	0	0	5000	300
75%	1000	1600	0	5000	720	0	0	9915	500
90%	8600	3600	900	9600	1176	0	300	22200	600
Maximum value ⁴	1,223,160	15560	9000	30000	12000	1200	8800	1,236,560	1600
ANOVA significance	.065	.617	.002*	.019*	.362	.748	.238	.084	.000*

Source: World Bank (2011) ¹ only for those who had income

Table 5-8 shows summary results for both lowland and upland farmers. Results indicate that lowland farmers receive about twice as much cash income and in-kind income from all sources as upland farmers. The main difference is income from farm sales. Results indicate that lowland farmers are able to generate more income than upland farmers. [Some respondents did not report cash income from farm sales because they barter. Data from other sources (CAWMP, 2012)

⁴ In farms with 25 or more members/workers, there is a strong bimodal distribution with some reporting very high farm sales, while others report very low farm sales.

indicates that in some areas such as Vanj, up to 80% of production is bartered. Thus, the figures may under-report income for some farmers. The results also indicate that farm households have a variety of sources of income. The differences in income are statistically significant at 95% confidence level for all categories except wages, social allowance, other and in-kind.

Table 5-8. Average income from various sources for lowland and upland farmers. Income is reported in Somonis (4.82 Somonis = \$1)

	Total farm sale income	Wages	Private business	Migrant remittance	Pension	Social allowance	Other	Total cash income	In-kind income
Lowland									
N	798	885	885	885	885	885	884	798	729
Mean	4894	1431	1138	3460	416	37	152	11739	1170
Std Dev	9659	2539	3254	7079	924	449	936	12824	11145
Median	1100	700	0	0	0	0	0	7411	400
Upland									
N	893	893	893	893	893	893	893	893	190
Mean	2435	1254	793	1462	517	8	236	6843	504
Std Dev	6866	1978	2269	2985	957	117	986	8497	827
Median	280	70	0	0	0	0	0	4790	200
ANOVA Significance	.000	.102	.009	.000	.023	.063	.066	.000	.411

Source: World Bank (2011)

Table 5-9 repeats the procedure for comparing male and female respondents. Results indicate that women report significantly less farm and private business income, but more migrant remittance income.

Table 5-9. Average income from various sources for farms headed by women and men. Income is reported in Somonis (4.82 Somonis = \$1)

	Total farm sale income	Wages	Private business	Migrant remittance	Pension	Social allowance	Other	Total cash income	In-kind income
Males									
N	1073	1106	1106	1106	1106	1106	1105	1073	506
Mean	4457	1292	1073	1984	469	18	210	9786	1389
Std Dev	9175	2301	3048	4044	1006	324	961	11699	13364
Median	1500	400	0	0	0	0	0	6104	380
Females									
N	618	672	672	672	672	672	672	618	413
Mean	2101	1424	787	3236	462	29	167	8054	594
Std Dev	6560	2234	2349	7253	825	333	965	9670	822
Median	0	720	0	0	0	0	0	4940	400
ANOVA Test sig.	.000	.239	.037	.000	.868	.488	.363	.002	.228

Source: World Bank (2011)

Large amounts of income from a single source can sustain a farm household. Farm income is one important source of income, but private businesses, migrant remittances, pensions and social allowances provide non-farm sources of income to protect against poor yields or low prices. Table 5-10 shows the diversity of income sources by lowland/upland farmers, male/female respondents, and whether or not the farm has 25 or fewer members or more than 25 member/workers. Results indicate that the average farmer has 2.1 income sources. Lowland farmers and farmers on farms with 25 or fewer members report significantly more diverse sources of income. There were no differences between men and women.

Table 5-10. Diversity of income sources by upland/lowland; gender; and farms with 25 or fewer members or more than 25 member/workers. The table shows the average number of income sources (farm sales, wages, private business, migrant remittances, pension, social allowance and other)

Lowland	Upland	Male	Female	<=25 members	>25 member/workers
2.25	1.95	2.10	2.10	2.14	1.90

Source: World Bank (2011)

There was also variation by region. Khatlon cotton growing raions (Qabodiyon, Shahrituz, Yovon, Jilikul, and Panj) had above-average income diversity, while cotton areas in the north in Sughd (Zafarobod, Konibodom, and Djabbor Rasulov) had low diversity. In the RRS region, Hissor, Rasht, Nurobod and Tojikobod reported higher than average income diversity, while Faizobod was lower than average. GBAO's Vanj was slightly above average.

Lowland respondents report more cash savings and household possessions, while upland respondents have larger numbers of livestock

One important way in which farmers can increase livelihood security and reduce vulnerability is by utilizing one of three methods of storing wealth: (1) savings in the form of cash, gold or some easily converted substance; (2) livestock that can be sold if necessary or used as collateral or loans; (3) household possessions such as cars, televisions, refrigerators or electronics. Table 5-11 shows lowland farmers were more likely to report at least some cash savings during the past few years.

Table 5-11. Percentage of respondents reporting cash or similar savings

	Lowland	Upland
No savings over the past few years	49.8	67.9
Some savings, but only a very small amount	29.0	21.6
Enough savings to survive a short-term agricultural downturn, loss of employment, or natural disaster	11.1	4.8
Enough savings to survive many months without income	5.6	1.2
Don't know	4.6	4.6

Source: World Bank (2011)

Respondents from Family farms (including individual farms) were slightly more likely to report at least some savings (38.7%) than respondents from all types of collective farms (34.0%). Male and female farmers did not differ in their rate of savings. Farmers working on smaller farms with

25 or fewer workers were more likely to save, with 44.4% reporting at least some savings compared to 34.9% of those on farms with more than 25 workers.

While lowland respondents tend to place savings in cash, upland respondents invest more in livestock. Although most households have at least one cow, upland respondents are more likely to have more cows or other forms of livestock. Table 5-12 shows the percentage of upland and lowland respondents who have any of six types of livestock. The table also reports the total average number of livestock of all kinds in each household for upland and lowland regions. Results show upland farmers make investments in substantially more livestock than lowland farmers.

Table 5-12. Percentage of upland and lowland households with each type of livestock, and total mean and median amounts

	Lowland % having ANY	Upland % having ANY
Cows	85.0	91.6
Poultry	42.3	63.8
Goats	20.3	59.4
Sheep	32.0	54.0
Donkeys	24.7	41.8
Horses or other animals for ploughing/cultivation	2.3	6.8
Mean and Median total numbers of livestock of all kinds in the household	Mean: 8.1 Median: 5.0	Mean: 18.3 Median: 14.0

Source: World Bank (2011)

Farmers working on farms with 25 or fewer members reported more livestock on average (13.9) than those on farms with more than 25 member/workers (7.9). Female heads of dekhani farms report an average of 10.7 head of livestock of all kinds compared to 19.1 for male-headed farms.

The third form of “savings” involves purchase of household possessions. Some of these possessions, such as a carpet, would be regarded as essential by most households. However, some could be considered a form of savings that could be sold if necessary. A car, which is a very expensive item, can be useful in making the household more productive, but it also is a way to store capital. From a list of 18 household items, lowland respondents have an average of 6.9, while upland respondents have fewer, with an average of 5.8. However, upland households are more likely to have a car or lorry, possibly reflecting their utility. Lowland households are more likely to have a radio, a fridge, a power generator and a bicycle. Table 5-13 shows the percentage of households in upland and lowland regions with each type of possession.

Table 5-13: Percentage of upland and lowland households having each type of possession

Asset	% of Lowland Households having this possession	% of Upland Households having this possession
Carpet	96.3	91.4
Mobile phone	84.8	88.1
Color TV	88.4	85.4
Tape/DVD player	78.7	69.3
Sewing machine	59.9	58.2
Car	39.2	42.4
TV satellite	29.3	31.0

Asset	% of Lowland Households having this possession	% of Upland Households having this possession
Radio	45.9	29.3
Fridge	31.7	18.9
Bicycle	51.2	13.7
Black and White TV	21.3	12.2
Power generator	18.3	10.9
Washing machine	10.3	9.7
Lorry	5.1	8.4
Landline phone	5.8	5.7
Tractor	10.8	5.4
Air conditioner	7.6	2.7
Motorcycle	3.6	1.4
Overall Average	6.9 of 18	5.8 of 18

Source: World Bank (2011)

Women who are farm heads report slightly more household possessions (7.3) than male farm heads (7.0). There was no statistically significant difference between farmers who are on farms with more than 25 workers (6.6) compared with 6.4 for those with 25 or fewer workers.

Better or worse off?

Respondents were asked a summative question about how their overall household situation now compares to 10-15 years ago. (It should be noted that 10-15 years ago the country was experiencing a civil war, and most regard those years as very difficult). Results in Table 5-14 indicate that the majority of men and those who are working on farms with 25 or fewer members perceive they are better off now than they were 10-15 years ago. Only a third of those on farms with more than 25 member/workers say they are better off; most say things are the same. Women also are more likely to indicate that their household's situation is the same.

Table 5-14. Percentage indicating they are better or worse off than 10-15 years ago by gender, lowland/upland, and number of members or member/workers on the farm

	Better off	Worse off	Same	Don't know
Men	52.5%	9.2%	30.9%	7.5%
Women	43.8	12.2	37.6	6.4
Lowland	47.1	8.8	37.1	6.9
Upland	51.1	11.9	29.7	7.3
<=25 members	54.7	8.8	30.4	6.1
>25 member/workers	33.1	12.2	48.8	5.8

Source: World Bank (2011)

Chapter 6: Stakeholder Groups

The agricultural transition from centrally operated, machinery-intensive, large-scale collective farms to smaller family farms necessitates consideration of how public, private and non-profit institutions and stakeholders can meet the needs of a new agricultural system. For example, the collapse of centrally-funded and provided sources of machinery, seed, fertilizer and other inputs has necessitated consideration of what the new needs of smaller scale farmers will be, and how these needs can be met. At the individual farm level, mechanisms for obtaining credit, inputs and needed services in a timely way must be considered. Instead of reaching a smaller number of large collective farms, these new mechanisms must reach thousands of small farmers, many of whom lack experience in managing farms and making independent decisions. Mechanisms also need to be found for resolving problems that extend beyond the scope of an individual farm. Such problems include protection of watersheds, provision of irrigation water and maintenance of canals and pumps, and mechanisms for group marketing or storage of farm produce. This chapter focuses on the emerging range of institutions and stakeholders that play a role in meeting both individual and group needs. Some of the material for this chapter comes from the survey of farmers, but much comes from qualitative interviews with local leaders and groups of farmers conducted in eight of the 18 raions studied.

Farming households interact with a variety of organizations and stakeholders – private, public, formal, informal – that set and implement policy and legislation, deliver services, purchase trade and conduct a range of functions that affect their livelihoods, particularly in relation to farmland restructuring and efforts in sustainable agriculture. In this study, three key categories of stakeholders are recognized: public, commercial, and membership-based/non-profits, and two types, formal and informal. (Table 6-1 shows examples of stakeholders encountered in the study):

- **Public** covers government agencies and bodies operating at state, raion and jamoat levels. These include both political and administrative divisions of government. Also included are external agencies such as multi- and bi-lateral donors;
- **Commercial** covers for-profit business operations, which include banks, companies (national and foreign) and individual entrepreneurs;
- **Membership-based/Non-profit** encompasses membership-based organizations such as producer and water-user associations, user groups, village/community organizations as well a range of public associations⁵ or non-government organizations (NGOs) that may be national or international.

Informal in the context of this study refers to arrangements that are not codified, e.g., complexes of social and cultural norms, behaviors and relationships, groups with voluntary codes, etc. These were predominantly membership-based, e.g., neighborhood or mahalla councils, and

⁵ The term “public association or organization” is more widely used. In the relevant legislation, non-government is applies to foreign associations. However, the term NGO will be used for this report for both Tajik and international organizations.

various types of user groups. Informal commercial arrangements, such as barter, were also reported.

Table 6-1: Categories of key stakeholders with which farming households interact.

Stakeholder Category	Public	Commercial	Membership-based/Non-profit
Formal	<i>Local Government (Hukumat)</i> - Raion (district): Departments (Agriculture, Irrigation, Forestry, Culture, Education) Committees (Land, Emergency Situations) - Jamoats (towns and village clusters)	- Banks - Limited Liability Companies (Financing, Agricultural Inputs, Extension, Contract Farming, Processing,) - Open Joint Stock Companies (OJSC-value chain support) - Individual entrepreneurs (traders)	<i>Membership-based</i> - Public associations/NGOs - e.g., Jamoat Development Committees, - Registered CIGs ⁶ /Producer Associations - Water User Associations/Federation of WUAs -Non-Bank Financing Organizations/Micro-Loan Organizations - Village Organizations ⁷ -Dekhan Farm Associations -Mosques
	<i>State Government</i> - President's Administration - Executive Office of the President - State Ministries, Committees and Enterprises: State Committee on Land Management and Geodesy, Project Management Units - LRCSP (including Regional Land Cadaster Centers), CAWMP (including Project Coordination Units) - Research Institutes		<i>Non-profit</i> - Non-membership public associations/NGOs, e.g., Legal Aid Centers (LAC),
	<i>External</i> - Multi- and bi-lateral donor agencies	<i>External</i> - International companies (commodities)	<i>External</i> International NGOs
Informal		- Barter exchanges (household and agricultural operations)	- Mahalla Councils (community/neighborhood groups) - Hashars (mutual aid groups) - Other Common Interest Groups User groups – inputs, pasture - Migrant Networks

⁶ Common Interest Groups (CIGs) comprise groups of farmers, producers or entire villages. CIGs are specific to CAWMP where they serve as the primary group for implementing and managing village-level rural production investments through contracts with JDCs. For certain types of investments, CIGs may comprise one or more FDFs or IDFs. Although not formally registered, CIGs have by-laws governing organizational structure and operations.

⁷ Village Organizations primarily exist in locations where AKF/MSDSP is active.

Stakeholder Interactions

Information sources and problem-solving

Tables 6-2 and 6-3 below show that while respondents interact with a variety of stakeholders in the public, commercial and non-profit sectors to learn about farmland restructuring and agricultural operations, the most commonly used sources are within an immediate cluster that includes households, other farmers, farm heads and farm associations. A notable success of the World Bank CAWMP project has been the creation of informal farmer-to-farmer networks within villages and jamoats that share ideas, experience and opinions on the pros and cons of various investments. These networks also consider how to replicate similar initiatives (CAWMP, 2011). Such networks can facilitate innovation and the development and sharing of knowledge, which builds both social and human capital. Local government, e.g., jamoat and raion administrations, and raion land committees comprise the next most commonly used group. In general, lowland respondents report using more sources, likely due to the more commercial nature of agriculture and easier access to offices. Not captured in the survey, but mentioned in focus groups and interviews were JDCs as information sources. JDCs not only facilitated participation in CAWMP, but also assisted in farmland restructuring. Other sources of general agricultural information included research institutes in some locations.

Table 6-2. Percent of respondents using each type of source for information on farmland restructuring

	Others in Household	Other farmers	Farm head	Hukumat	District Land Committee	Legal Aid Center	Tashabuskor	RLCC
Upland	60.3	26.75	53	44.2	31.2	2.9	3.5	5.5
Lowland	41.1	13.9	43.0	25.6	21.1	5.4	5.0	5.5
Male	53.1	23.3	47.6	39.2	30.4	4.4	4.6	5.5
Female	44.4	13.4	44.6	25.0	17.5	4.0	3.9	5.5

Source: World Bank (2011)

Table 6-3. Percent of respondents using each type of source for general agricultural information

	Other Farmers	Hukumat	Dekhan farm assoc.	Govt/ Extension	Businesses	WUAs	Bank or Financing Provider	RLCC
Upland	77	50	26	8	17	6	6	3
Lowland	79.8	24	42	15	29	20	7	14
Male	76.1	43.7	25.9	9.7	21.3	9.7	5.6	4.0
Female	80.2	41.6	32.2	6.2	13.2	5.3	6.2	4.5

Source: World Bank (2011)

Barriers in restructuring and problems in agriculture

Table 6-4, below shows the key stakeholders with whom farming households interact on several issues, and the major roles of stakeholders in these issues. The key issues are: costs of establishing family farms; tax disincentives associated with farmland restructuring; and access to

inputs finance, water, product markets and pasture.⁸ Both family dekhans and collective farms highlighted problems of access to: farm machinery, seeds, chemicals and other inputs; irrigation water and equipment; credit particularly for inputs; pasture and rangelands as well as problems of management, e.g., rotation; and finally markets for agricultural products. Other than access to pasture (which was not asked about in relation to restructuring), these factors were perceived as important barriers to restructuring as well as problems in agricultural production.

Personal hierarchies and sources of influence

It is worth highlighting certain aspects of political economy that provide some context to the perceptions held about the above issues, as well as the roles of various stakeholders shown in Table 6-4. Personal hierarchies with elements of clan and ethnic alignment are influential at all levels. Networks formed along kinship ties in both formal and informal organizations retain their importance as they did in pre-Soviet eras and Soviet eras. For example, even in rural areas, the ties and networks associated with collective farming can and still do dominate. The former farm head or “brigadier” or “*rais*” is able to exert considerable influence to impede or facilitate activities related to land and water. Where people are not fully aware of their rights, the *rais* can be regarded as a powerful person who is a conduit to local government and a source of information. In some cases, the *rais* is perceived as the *de facto* village leader. Former farm heads can be found as WUA chairmen and heads of user groups such as CIGs, having used their capacities to lead mobilization and manage subsequent operations.

The authority vested in stakeholders to implement and enforce policies and rules, particularly at local (jamoat and raion hukumat) levels, is an important means to influence processes and outcomes. Again, if rural people are not completely aware of their rights or of relevant rules and regulations, this can have significant implications for their interactions with local government. Local officials control many of the procedures associated with farmland restructuring including land allocation, documentation, and certificate issuance.

Other Stakeholder Roles

There is a limited amount of interaction with formal commercial stakeholders, e.g., LLCs involved in agricultural input supplies and contract farming. Barter transactions, often exchanging farm produce for household needs, are common among rural populations, especially upland regions. The most commonly reported informal arrangements include Mahalla Councils cited in conflict management and *hashars* as a source of labor.

Mahalla Councils

Even as *de facto*, non-legislated, non-elected units of community self-management, Mahalla councils and their heads can exert considerable power and influence on a mahalla or neighborhood - “*The head of mahalla is ruling over all work of the village...For solving any problem first of all we talk to head of mahalla and then only approach jamoat*”, (Farmer, Pandjakent district). Generally, Islamic concepts of social justice and behavior guide their

⁸ Although local officials considered allocation of small size parcels of irrigated lands to be a barrier to farmer interest in restructuring, farmers did not perceive this factor as significant compared to other barriers.

approach to dealing with community matters. Women are generally poorly represented in the councils, if at all. Mahalla councils vary considerably across the country and from village to village. Some are closely aligned with local government, e.g., some heads receive salaries from the Jamoat; others are more independent, and levels of activity and engagement in community

Table 6-4. Stakeholders involved in various types of agricultural problems

Stakeholder Categories	Costs of farm restructuring	Tax Disincentives	Access to Inputs	Access to Irrigation	Access to Finance	Access to Markets	Pasture/Management
Local Government (Hukumat)	Jamoat – application assistance Raion - approvals Raion SCLG – demarcation and certificate issuance	Raion Administrations – tax collection		Raion Irrigation – water release			Jamoat/Raion- permits for grazing and transit
State Government	President’s Administration & ODPM – Policy/Rules SCLG – Cost recovery from fees PMU/RLCCs – Demarcation and certificate processing (project sites)	Executive Office of the President – Policy/Rules National Tax Committee	President’s Administration & ODPM – Policy/Rules – private sector and trade enabling environment	President’s Administration & ODPM – Policy/Rules Ministry of Land Reclamation and Water Resources	President’s Administration & ODPM – Policy/Rules	President’s Administration and ODPM – policy rules – private sector and trade enabling environment	Forestry and Committee on Environmental Protection - Policy
Commercial			LLCs, OJSC, traders		Banks LLCs (few)	LLCs – Contract farming, processing, OJSC – value chain support Traders	
Membership-based non-profits	VOs/JDCs/DFAs – application preparation	DFAs – member payments		WUAs/CIGs – management and investments	NBFOs/MLOs JDCs	Producer Associations	
Other non-profits/NGOs	LACs/Other NGOs – rights awareness and additional support	LACs/Other NGOs – rights awareness and additional support		NGOs – rights awareness and other support		NGOs – value chain support	NGOs – pasture management support
Informal groups and arrangements			Machinery user groups	Mahalla Councils – dispute resolution, Hashars – shared labor		Barter	User groups/CIGs – grazing management
External - Public Agencies and Non-profits/NGOs	International Donors and NGOs – Policy recommendations, project financing International NGOs – projects	International Donors and NGOs – Policy recommendation	International Donors and NGOs – project financing	International Donors and NGOs – project financing and implementation	International Donors and NGOs – Policy recommendations, project financing International NGOs – projects	International Donors and NGOs – project financing	International Donors – Policy recommendations, project financing International NGOs – projects

matters are not uniform. There have been recommendations by state government to local authorities to register mahallas under a special statute.⁹ Mahallas appear to be valued for their accessibility, familiarity with local conditions, and cultural relevance, but their ability to develop independent social capital is limited given their governance. As with similar informal arrangements, particularly in the absence of other forms of dispute resolution, there is potential for such arrangements to favor certain groups to the exclusion of others, and perpetuate local values and norms of behavior in ways that may adversely affect the livelihoods of sections of the community, e.g., women, youth, ethnic groups. They can, however, serve as a useful place to start community building exercises, and particularly if conditions for their participation include diversifying representation.

Hashars

The use of *hashars* or pooled community labor is common throughout the country, but was particularly noted in the CAWMP sites. Village members are mobilized through leaders (sometimes mahallas or mosques) to work on a range of activities including infrastructure repair, emergency response and agriculture that may benefit an entire village or certain households. For some, hashars are seen as critical inputs into the livelihood strategies and general well being of households and communities – “*Hashar has always existed in mountainous areas and will exist forever. We cannot do without hashars...*” (Vanj district).. Although hashars can facilitate cooperation, reduce costs, and be called upon as coping responses in times of emergency, both obligations to assist others and the right to call for assistance can pose difficulties. Participation is not compulsory, but hashars are based on principles of reciprocity and failure to participate carries sanctions, - “*A hashar cannot take place without problems and dispute; some people do not come to hasher. When we collect money, one half of the people do not pay; then you have to argue, not let their cows come to the pasture, stop them from coming to public events...*” (farmer, Danghara district). For asset-poor households, obligations may be exploitative, burdensome or not possible at difficult times. Punishment may contribute to increasing existing vulnerabilities as can some obligations associated with requesting assistance, “*Now, to organize a wheat harvesting hashar, I buy 4 kg of meat at 22 Somoni per kg and 6 water melons and make no profit...The land productivity has dropped. At that time one spike [of wheat] had up to 160 grains, while now it is 20-25 only*”, (female, Vanj district).

Jamoat Development Committee/Centers: experience from CAWMP

Recent shifts in local governance strategies toward more active roles for Jamoat councils, have given rise to questions about the role of JDCs in the rural development agenda. Although found in all regions of Tajikistan (but not all jamoats), in the study JDCs, and their equivalents, JRCs and SUDVOs, were most frequently mentioned in CAWMP sites.¹⁰ Here, in the absence of functioning local government administrative and advisory capacities, JDCs provided technical and financial management services to project beneficiaries, and participated in the screening and approval of proposals at jamoat and regional levels. Other alternatives to JDCs had disadvantages at the time. Using large NGOs and centralized government would have been less

⁹ UNDP (2009) Communities Programme, Final Outcomes Evaluation Report, Dushanbe, Tajikistan.

¹⁰ JRC's were established by the UNDP communities programme (and other donor led initiatives to mobilize civil society in the definition of local development priorities and, in the absence of functioning local government, to target project funds at prioritized social infrastructure investments. They also provide legal and technical advice.

participatory, transparent and accountable to the interests of local people. Village-level support would have been too expensive and faced human capacity constraints. Of the 39 JDCs participating in CAWMP, 26 were established with project funding. The others were established previously by UNDP. In CAWMP, the use of these sub-district organizations provided an efficient, transparent and accountable way of providing essential support to CIGs for the period of initial investment, i.e., the six-year period of project implementation. JDCs successfully managed project fund transfers of almost \$7.5 million to more than 3,800 CIGs. All 39 JDCs are still functioning to varying degrees facilitating the provision of micro-loans, updating village plans, seeking funding for projects, and working with other local organizations, e.g., WUAs, NGOs (January 2012 telephone survey by CAWMP PMU). For 25 of these JDCs, operational costs are being met primarily from facilitating micro-loan programs. The remaining JDCs are seeking funds but do not have any at present; and activities in some cases are limited to at least one officer maintaining the organizational shell and seeking future opportunities. With JDCs, CAWMP has demonstrated effective mechanisms for participation, technical support and financial management that have helped build farmer capacities to sustain investments in agriculture and land resource management. Similar fixed-term functions can be explored in the current efforts of other donors and organizations that are strengthening sub-district representative government bodies as well as those that continue to support JDCs.

Examples of resolving problems that extend beyond the farm

A total of 281 (15.6%) of the 1800 respondents said they had at least one problem that they could not solve by themselves. Table 6-5 summarizes whom the farmers involved in such cases. Resolution was sought primarily through village/community/farm-based stakeholders with mahallas/dekhan farm members the most common response for the three most common problems – lack of water, cleaning canals and right of way difficulties. Although the sample size is small, results also clearly indicate that for upland respondents, the only group leading to a satisfactory solution to a lack of water was mahalla/dekhan farm members. In contrast, for lowland farmers, involvement with another village and with other relevant organizations also led to satisfactory outcomes. Again as with sources of information, this pattern of interaction may be a function of accessibility, as well as the more localized nature of the problem in upland areas. Findings from CAWMP sites also note a sharing of production from rural investments, e.g., honey, cereals, eggs, with neighbors and poorer villagers as a means of conflict avoidance and maintaining social cohesion, as well contributing to informal safety nets for the poor¹¹.

Table 6-5. Types of problems and groups involved in trying to resolve them (% use by respondents)

Issue	Farm head	Mahalla head	Mahalla/ and farm members	Another village	Hukumat	Other relevant orgs	International orgs	Other	Don't know
Lack of Ag equipment	70.6			23.5					
Lack of money for inputs	100								
Lack of water	4.7	7.8	44.0	19.7	0.5	8.8	1.0	11.9	2.1

¹¹ This use of surplus may negatively affect household financial capital and enterprise expansion but perhaps social benefits outweigh the losses at this stage.

Issue	Farm head	Mahalla head	Mahalla/ and farm members	Another village	Hukumat	Other relevant orgs	International orgs	Other	Don't know
Cleaning canals	3.8	7.7	46.2	23.1					19.2
Way difficulties	7.1	2.4	81.0	2.4		2.4			

Source: World Bank (2011)

Focus group participants noted that the traditional land registration process was not effective. Registration can take several years with time spent on correcting mistakes and visiting numerous offices. Similarly, interactions with local government, farm heads and NGOs to seek information, can have implications for rural households. These organizations and individuals can control not only access to information, but also its interpretation, which can be particularly critical when those inquiring are poorly informed about rights, rules and regulations. Correct and timely information clearly facilitates decision-making by households whether related to farmland restructuring or agriculture in general. Issues of control are also associated with access to key resources with irrigation water and grazing/pasture the most frequently mentioned. Access to these resources is generally under the authority of local government departments that regulate use through informal arrangements with farms, formal agreements with WUAs for water release, or through permits issued to herders or user groups or grazing. WUAs and similar formal and informal membership-based organizations that focus on advancing members' interests can be seen as one means to achieve positive outcomes for rural households. Such organizations can also contribute to effective management of common property resources, e.g., pasture, water, that are critical to agricultural livelihoods.

User Groups: experience with Common Interest Groups in CAWMP

Respondents were members or interacted with a number of different types of user groups. Some are registered with local authorities while others are informal but may evolve into formal organizations as membership increases and/or to acquire legitimacy and influence in their operations. In CAWMP, Common Interest Groups (CIGs) as an organizing concept for rural production was critical to the implementation and sustainability of small-scale investments. CIGs could comprise individual households, groups of households or entire villages depending on the type of investment. CIGs emerged from village-level participatory planning in which investments and groups of beneficiaries were selected. For most income-generating agriculture and horticulture investments, CIGs were three to nine households; land resource management groups were between 12-16 households. In land-based investments, e.g., mixed-cropping, horticulture, it was not uncommon for CIGs to be shareholders of a family farm, but groups of unrelated households also comprised CIGs. Entire villages, sometimes organized as WUAs, were more common for rural infrastructure investments but these were not the main focus of CAWMP. Each CIG has by-laws governing its management and operations, and had contractual agreements with JDCs for the receipt and reporting of project financing. Even though there was considerable geographical, cultural and organizational variation within CAWMP, successful CIGs appear to share some similarities. Features include: expertise of members (either acquired through the project or existing); pro-active and motivated leadership (of the CIG and JDC); land tenure security (where needed, e.g., crop production, horticulture); clarity in working arrangements and benefit-sharing; and the type of investment executed. Also important has been the quality of the participatory planning process that identified village priorities, CIGs and the

choice of investments. It is estimated that about 80-90% of CIGs are still generating benefits for members. While failure of CIGs can, on the surface, be attributable to events such as floods and disease, in many cases careful risk assessment during planning may have led to more appropriate choices of investments and better design.

User groups: eligibility requirements for grants to Water User Groups under LRCSP

In the past, many Water User Associations (WUAs) have not functioned well and have not maintained the on-farm investments in their areas. To address this issue, the LRCSP pioneered new arrangements for financing grants for WUAs to undertake irrigation rehabilitation investments, with specific eligibility requirements. To be eligible, 70% of the irrigation command area must be covered by farms that already have family dekhan farm land use certificates, i.e., farms with no more than 25 adult shareholders. In addition, the Water User Associations must be established and operational with clearly specified good governance standards¹². Beneficiary contributions must be at least 25% of the grant amount, with 5% in cash at inception. The implementation of these grants under LRCSP started in 2010, resulting in the creation of 60 WUAs and support for the rehabilitation of on-farm irrigation networks on 10,695 ha under family farms.

Examples of Stakeholder Issues and Interactions

The following examples from three different raions, one lowland and two upland, provide some examples of specific issues involving stakeholder groups. The third example, Vanj, shows how long-term development activities have shaped social capital in this raion.

Zafarobod: Stakeholder involvement in irrigation water allocation.

An international donor has helped establish water user associations in Zafarobod. There are 11 of these each serving 75 family farms. (The 2011 survey data shows that the average number of workers on a family farm in Zafarobod is 6.97, or about 7 per farm, which would be about 5,775 people served by the associations.) The water user association collects 1 Somoni per month (12 per year) for its services. It provides coordination of water services among its members (there is also a water user association for drinking water that is taken from a nearby spring). The association has 6 staff, whose salaries are paid by the user fees. Originally, the water user associations had the responsibility to distribute water, but recently relations with the irrigation authority have worsened. The irrigation authority has indicated that it favors dealing directly with farmers rather than having them go through an association. An advantage of the association is that it knows what its members need and when. The association has regular meetings to discuss issues with members, including wise use of water. When the associations were established, the donor provided equipment enabling them to measure the flow of water for the

¹² (a) the WUA is registered and has a copy of the registration certificate; (b) at least 90% of the members have approved the articles of association in a general body meeting, with the relevant general body minutes signed by all participants; (c) the executive committee members and chairperson of the WUA are elected on a rotating basis, and reflected by minutes of the most recent election; (d) the chairperson is serving on an honorary basis without remuneration, and this is specified within the articles of association; (e) the WUA has an account at a local bank; (f) the WUA has an agreement with the raivodkhoz (raion irrigation department) for the irrigation water.

first time. Three different types of gauges were provided. Previously, there was no good way to measure the volume of water distributed to a farm. The traditional measure was 1 hour of water per hectare irrigated. One possible reason why the irrigation authority is seeking to deal directly with farmers instead of going through the association concerns money. Previously, the irrigation authority charged a different price depending on each crop. A hectare of one crop might cost 2,100 Somoni. The association charged a uniform fee regardless of crop of 930 Somoni. This could be reducing the irrigation authority revenues. In addition, under the old irrigation authority system there was no accurate way to measure water, and payments did not specify an exact amount water to be delivered. The associations measure water. A third possible reason is organizational: four of the associations merged into a federation, which might be perceived as giving it more power to negotiate with the irrigation authority. Although relatively new, these associations provide one possible mechanism for resolving disputes over distribution of scarce irrigation water. It was noted that the associations are in demand, yet they are not yet strong or stable. They need support from authorities.

Tojikobod: Local group discusses and rates agricultural stakeholders

As a qualitative part of the study, groups of farmers from several raions were gathered to talk about their relations with stakeholders and effectiveness in addressing local problems. The groups included local teachers, bankers and others in addition to farmers. In Tojikobod, some of the farmers belonged to Common Interest Groups that were part of the World Bank-financed CAWMP, but others did not. As a part of the discussion, participants were asked to explain their views about local institutions, organizations and stakeholders. The results represent only the views of this group, but some of the issues discussed illustrate stakeholder and institutional problems that are common to many areas.

In each area, members of the group were asked to list local organizations, and then rate them in terms of whether the group had faith in them, the percentage of time that they provided help when needed, an overall effectiveness percentage rating, and an indication of whether local people play a role in decision making in the organization. The list of organizations and ratings by the group in Tojikobod is shown below in Table 6-6. The Tojikobod group members also pointed out that although there were banks in the area, most farmers preferred not to try to obtain loans from them. For this reason, they were not included in the table.

Table 6-6. Performance ratings of local organizations by members of the group

Name of organization	Percentage rating of the group's faith in the organization	Percentage rating of providing support when needed	Percentage rating of overall effective performance	Do local people play a role in decision making?
Agriculture Dept.	20	20	20	Yes
Land Committee	10	10	10	Yes
Aga Khan Foundation	100	100	100	Yes
World Bank (Jamoat Development Centre)	100	100	100	Yes
Red Crescent	100	100	100	Yes
WFP	100	100	100	Yes
Jamoat	50	50	60-70	Yes
Water utility/Vodkhoz	20-30	20	20	No

Source: World Bank (2011)

Group comments about the organizations included the following:

- About the water utility, the group said: “The water utility is ‘good’ in collecting money only. We will give 20-30% in order not to shame them. They are not effective. The water utility doesn’t collaborate with anyone.” The water utility was the only group mentioned in which local people feel they have no voice.
- About the jamoat, group members observed that jamoat officials force farmers to grow potatoes. “Whether we like it or not, we have to grow potatoes in a proportion of 0.03 ha per 1 ha of land. It is profitable but most of the time seeds are of poor quality that results in bad yields. If we don’t grow potatoes on the required portion of land, we are asked to give the land back.”
- About the agricultural department, one group member observed: “The agricultural department does not influence us at all and does not play a role. The seeds are not provided by them and we buy them ourselves. We cannot find seeds of good quality. If the agricultural department can provide us with good seed, the yield would be better. The agricultural department does sometimes enforce hukumat orders for how much potato we need to grow.”
- The land committee received low ratings, but many observed that after the land committee had carried out its function of dividing up land, it was no longer seen as having much importance.
- High ratings were given for World Bank project activities in the area that created local village committees and groups to finance small-scale projects. High ratings also were given to activities of the Aga Khan Foundation, Red Crescent, and WFP (for school improvements).

The Tojikobod group example illustrates some of the local organizations and stakeholders that are active in many raions. Although there is considerable variation across raions, further consideration of how these types of organizations might serve the emerging needs of small-scale farmers is needed.

Vanj: A special case showing how long-term development work impacts stakeholder involvement and effectiveness

A number of features distinguish Vanj from other raions in the study. In this relatively small raion, LRCSP issued as of December 31, 2011 3,583 land use rights certificates (and as of March 31, 2012 a cumulative total of 4,057 land use rights certificates were issued). A total of 3,836 ha (out of 5,114 ha, i.e., 75%) of farmlands used by different categories of farming entities were covered with those certificates. Over 90% of respondents in the survey classified themselves as working on individual dekhan farms and making most of the agricultural decisions. Vanj recorded the highest mean score of all raions on the knowledge test on land use rights and farm restructuring. Results also showed 100% of the surveyed Vanj farmers reported being members of other agricultural organizations and groups. In 75% of the cases, respondents said that the organizations helped farmers to be in charge of their own lands. It appears that farmers have been operating under these *de facto* arrangements for several years. The long-term commitment, initiative and leadership of AKF/MSDSP resulting in trusted and generally effective networks of rural organizations have been critical in supporting the predominantly independent behavior of

Vanj farmers and their participation in both formal and informal organizations. Allocation of farmland shares was initiated in 1997, facilitated by AKF/MSDSP and supported by local government. Humanitarian assistance from AKF/MSDSP was in part conditional on recipients having been allocated their farmland shares for specific parcels. Recipients considered the allocations of household plots and agricultural land generally fair and felt sufficiently confident in the process and organizations involved to choose crops and invest without having certificates in their hands. For more than a decade AKF/MSDSP has invested in building rural institutional capacities and networks. These have included membership-based village organizations and jamoat support centers that are key actors in rural development including farmland restructuring and agricultural production. Focus groups and interviews indicated that farmers are aware of the benefits or otherwise of such organizations and their own roles and responsibilities. High levels of trust were also expressed in AKF, and the range of formal and informal village and jamoat-level organizations with which farmers are working.

Chapter 7: Assessing Aspects of Livelihood Security and Vulnerability

Limited management control over farmland, land degradation and low levels/low diversification of other assets are considered to be key drivers of rural vulnerability in Tajikistan and thus affect household means of resilience and coping strategies. This chapter first examines perceptions by members of households concerning the severity of a number of possible areas of risks and stresses. This examination provides information about the external environment in which people exist and provides some insight into the factors (stresses, shocks and trends) that have impact on household asset or capital status. Five types of household capital are then discussed in light of the findings of the study to better understand household livelihood security and vulnerability: human, financial, natural, physical and social. The chapter then provides a preliminary assessment of sensitivity and adaptive capacity using an approach commonly used to assess vulnerability to climate change risks. This study examined the sensitivity households have to these areas of risk and problems, and also their adaptive capacity to increase household resilience. Examples of adaptive capacity include income diversity, savings in various forms, farm investments, and adoption of sustainable agricultural practices.

Perceptions of Risks and Problems in Agriculture

In the survey, respondents were asked to indicate for each of 20 different types of problems whether or not they considered them to be “major problems”. Problems presented were designed to cover many of the forms of capital, including financial, physical and natural problems. Human capital problems such as a lack of education and training, and social capital problems such as linkages to others in the community are also covered later in this chapter. Results shown in Table 7-1 compare problems rated as “major problems” by respondents in lowland and upland regions. In general, lowland respondents were more likely to rate a problem as “major” across all categories. More upland farmers rated the physical capital problem of bad roads, bridges and infrastructure as “major”. Lowland farmers rated bad roads, bridges and infrastructure in 11th place. Both lowland and upland farmers rated four financial capital problems in their top six and both included access to markets, access to credit, farm debt and lack of clothing as “major” financial problems. (Lack of clothing may be related to school uniform costs, which can be a burden for those with larger families). Both lowland and upland respondents also listed pasture access and rotation in the top six. Lowland respondents listed one natural capital factor – landslides/mudslides in their top six.

Natural and physical capital problems tended to be in the second group rated seventh through 12th. Floods and access to water for irrigation were natural capital factors rated in the top 10, and upland respondents rated landslides/mudslides as seventh in importance. Lowland farmers emphasized physical capital problems in the top 10 as well – access to inputs such as seed, fertilizer and chemicals; and access to mechanical equipment. Upland farmers listed several financial factors – such as debt, credit and payment of taxes. Ranking 13th to 20th in both groups are a number of natural capital factors including pests and diseases, soil fertility, drought, and rainfall variability. Also near the bottom were rising food prices and seed and input prices.

Table 7-1. Perceptions of “major problems” by lowland and upland region respondents

Lowland Region				Upland Region			
Problem	Rank “most important”	% “most important”	Type of capital affected	Problem	Rank “most important”	% “most important”	Type of capital affected
Access to credit	1	43.9	Financial	Bad roads, bridges, infrastructure	1	33.6	Physical
Access to markets	2	39.3	Financial	Pasture access /rotation	2	33.5	Natural
Pasture access/ rotation	3	33.6	Natural	Lack of clothing	3	28.6	Financial
Farm debt	4	30.3	Financial	Farm debt	4	27.4	Financial
Landslides/ mudslides	5	29.8	Natural	Access to markets	5	26.7	Financial
Lack of clothing	6	28.7	Financial	Access to credit	6	25.8	Financial
Floods	7	27.5	Natural	Landslides/ mudslides	7	25.6	Natural
Access to water for irrigation	8	27.1	Natural	Payment of taxes	8	22.1	Financial
Access to inputs – seed, fertilizer, chemicals	9	26.7	Physical	Access to water for irrigation	9	16.0	Natural
Access to mechanical equipment	10	25.9	Physical	Floods	10	15.1	Natural
Bad roads, bridges, infrastructure	11	24.9	Physical	Lack of food	11	14.7	Financial
Soil erosion	12	23.3	Natural	Access to mechanical equipment	12	11.9	Physical
Payment of taxes	13	22.9	Financial	Pests/Diseases	13	11.4	Natural
Pests/Diseases	14	21.5	Natural	Soil erosion	14	11.1	Natural
Soil fertility	15	19.4	Natural	Seed/input prices	15	8.6	Financial
Lack of food	16	19.1	Financial	Access to inputs, seed, fertilizer, chemicals	16	8.1	Physical
Seed/input prices	17	16.4	Financial	Soil fertility	17	7.0	Natural
Drought	18	13.7	Natural	Rainfall variability	18	6.2	Natural
Rising food price	19	13.5	Financial	Rising food price	19	5.3	Financial
Rainfall variability	20	12.9	Natural	Drought	20	4.1	Natural

Source: World Bank (2011)

Perceptions of major problems by number of member/workers on the farm

Results indicate important differences between those on farms with more than 25 member/workers and those with 25 or fewer members. Those on farms with 25 or fewer member/workers are more likely to perceive that farm debt, payment of taxes, bad roads/infrastructure, and landslides/mudslides are “major problems.” Farmers with fewer member/workers are also more likely than respondents on farms with more member/workers to

perceive that environmental and climate change problems are “much worse” now than they were 10-15 years ago.

Those on farms with more than 25 member/workers are more likely to perceive that a lack of food and rising food prices are “major problems.” They also are more likely to perceive that access to mechanical equipment and access to water for irrigation are problems that have become “much worse” in the past 10-15 years.

Table 7-2. Perception of Major Problems and their Severity over past 10-15 years by Number of Member/Workers on the Farm.

	Percent Perceiving Item Is a “Major Problem”		Percent Perceiving Problem is “Much Worse” Now than 10-15 years ago	
	25 or fewer farm members	More than 25 farm members	25 or fewer farm members	More than 25 farm members
Access to mechanical equipment such as tractors, pumps, etc.	20.8	22.1	20.8	30.3*
Access to water for irrigation	24.2	18.9	20.4	28.8*
Access to inputs such as seed, fertilizers, chemicals	19.0	21.4	16.5	22.7
Access to credit	36.4	31.4	20.8	19.0
Problems of farm debt	31.5*	23.6	21.1	18.8
Access to markets for agricultural products	33.6	40.9	19.8	19.4
Rising prices of seed, fertilizer and other inputs	14.4	9.4	16.4	17.5
Payment of taxes, either officially or unofficially	24.6*	14.7	18.3	17.1
Bad or inaccessible roads, bridges, water systems or other infrastructure	31.9*	17.8	21.0	20.3
Drought	10.1	4.8	15.4*	3.1
Rainfall variability	10.8	5.6	15.0*	5.0
Floods	24.6	20.7	18.5*	6.3
Landslides/mudslides	31.2*	21.3	23.4*	7.8
Pests/diseases of crops	17.8	21.6	17.1*	6.4
Decreasing soil fertility	14.6	17.6	18.8*	8.0
Increasing soil erosion	20.1	13.5	19.2*	9.4
Pasture access and rotation	35.5	33.3	24.5	25.8
Lack of food for your household, especially during the dry season	17.3	25.5*	15.9	22.8
Rising food prices	8.7	22.3*	15.8	20.8
Lack of enough clothing for your household	29.4	35.2	20.0	20.8

“*” indicates an important percentage difference between the two groups.

Analysis in Terms of Five Forms of Household Capital

The following section expands the analysis through the lens of various forms of household capital or assets that contribute to sustainable livelihoods. Constrained assets or types of capital limit a farmer’s ability in attaining greater productivity or coping capacity in the rural sector.

Human Capital

Human capital is of crucial importance because the end of centrally managed large-scale farms and land registration activities led to the creation of thousands of family farms. The result has been a huge need for information by farmers about choices they have in this new environment. Information about land rights and farm restructuring is critical, along with the capacity to take advantage of opportunities and make choices. Skills, knowledge and labor needed to make independent decisions once land certificates have been awarded are lacking in many cases. Farmers are not aware of the choices they have for crops, or how to market them. They also may not be aware of information on access to irrigation, fertilizer, and other inputs.

Key Observations

- Respondents lack specific agricultural training from vocational or higher educational institutions, and given the increased number of farm decision-makers and choices, this is a source of vulnerability;
- Respondents have at least basic knowledge of their land rights as a result of project activities on education; they lack specific knowledge the laws, and also do not have specific knowledge of the specific steps necessary to restructure their farms;
- Most respondents now believe they can make key decisions about what to plant, what seed and inputs to use, how to finance, and how to market their crops. However, especially for cotton, there are several raions where choice appears to be very constrained;
- On average, responding farmers say they have 2-3 sources of general information about agriculture, with the most common being local sources such as other farmers and the Hukumat;
- Women have less access to information sources about land restructuring and land use rights than men, and lower knowledge. However, for general agricultural information, they are equal with men in type and number of sources used.

Almost two-thirds of respondents said “lack of experience and confidence in cultivating the land” was either a somewhat important or very important reason for not breaking up a Collective dekhan farm. Thus, while there is a basic education base among rural farmers, the lack of education in agriculture becomes important as both the number of individual farm decision-makers increases, and the range of possible choices for agricultural activities increases. Crop decisions, understanding alternatives for buying inputs, credit, marketing, all become more important.

Eighty percent of respondents report they have at least one source of information about land restructuring and land use rights, which is an indication that most farmers are at least familiar with some of the changes that have occurred. The fact that one in four women lack such information suggests that more efforts are needed to specifically target women with this information. Women also have lower overall information source scores (3.55 compared to 4.84 for men). Information scores varied widely across the 18 raions, from a low of 1.3 average sources in Kuhistoni Mastchoh to a high of 10.3 in Nurobod. This variance is due in part to different levels of project activity in each raion over time, as well as cultural variations in women’s roles, e.g., more conservative attitudes toward women in Kuhistoni Mastchoh.

Farmers were also asked about general agricultural information-seeking activities. Interestingly, the gap between men and women observed for land restructuring information was not found for general agricultural information, indicating that women had similar access.

In a 13-item knowledge test, 75% knew that their rights to land can now be passed along to children or spouses, 66% knew they could lose their rights to land if they did not farm the land for two years, and 80% knew that a woman has the right to be farm manager. Correct answers were less common for procedural questions about where and how land restructuring works. These results indicate most farmers have at least a basic knowledge of some important impacts of land restructuring and land use rights, even if the process is not well understood. Not surprisingly, those who have gone through the process of land restructuring on family farms are the most knowledgeable.

Social Capital

Social capital allows farmers to connect to others who have control over resources or information. Networks of friendship and kinship/clans, or those with economic or political power influence whether or how farmers cope with problems and opportunities, especially those that require action on a scale beyond the farm. Chapter 6 focused on a variety of issues relating to social capital and farming in Tajikistan. Additional detail on each of the key observations below can be found in Chapter 6. The ability of farmers to access public, commercial, and non-profit sources of information and services will be an important factor determining whether or not restructured family farms succeed. The collapse of centrally provided and managed resources under the Soviet system has led to a need to consider how various stakeholders can interact to meet farmer needs. The scale of needs for social capital linkages has increased dramatically as thousands of new farms have been created, each needing information and assistance.

Key Observations

- At the present time, responding farmers indicated that they have access to the local Hukumat, farm head, and other local leaders that provide information and assistance not available from the household itself. However, these sources do not always provide unbiased information, and in some cases have actively resisted farm restructuring.
- Qualitative interview results indicate that farmers on their own experience difficulties in restructuring farms. Delays of years in the process, paperwork returned because of mistakes, and a perception in some cases of unfair land division were frequently reported. The difficulties provide an example of the need for local training of stakeholder institutions that are asked to provide services and support to farmers, as well as oversight to ensure fairness and effectiveness of the process. Several groups praised LRCSP because as a part of the restructuring process, the project works with farmers directly to provide certificates confirming long term rights to land.
- Mahalla Councils and traditional *hashars* were mentioned in many of the focus groups and survey responses as a commonly used method to address problems, especially problems such as the need to clean irrigation canals or repair roads that require labor and a degree of conflict resolution. This traditional approach is well understood by local farmers. However, it works best when the problem is one that everyone would benefit from working on, and one that

does not require longer term management. Only 15.5% of the 1800 respondents reported a problem in the past 2 years that went beyond the ability of the household to solve by itself. Most involved a lack of water, right-of-way disputes, access to agricultural machinery, or a need to clean irrigation canals. Mahallas and local dekhan farmers, were commonly used and were relatively successful in dealing with cleaning irrigation canals and right-of-way problems. They were less successful in dealing with a lack of water. Farm and Jamoat heads were used for problems involving lack of machinery, but seldom resulted in a satisfactory solution.

- Water User Associations were created in a number of areas to improve water management. In some cases, these WUAs interacted successfully with the Water Authority; in others, there were conflicts over services provided, methods of measuring water, and financial resources. The fact that there are now thousands of farms instead of hundreds increases the complexity of water allocation and management. Chronic shortages of water and electricity needed to power pumps mean that important policy decisions must be made, but qualitative interviews indicate that farmers feel they have no trust or voice in Water Authority decisions. Focus groups listed a variety of stakeholders groups. Some, such as Mahalla Councils and *hashars*, are traditional methods of addressing local problems that can be applied to current farming problems such as the need to clean and maintain canals. Others, such as new commercial or non-profit sources of farming inputs, processing, or marketing have emerged. Focus group members acknowledge, sometimes with regret, that the centralized services once provided by the raion agricultural department and collective farms are no longer available. It is less clear in many cases what might emerge to provide these services. Focus group members also noted that in some cases traditional authorities have maintained their earlier role of mandating certain crop and marketing quotas.
- The development of social capital has not been uniform across raions. In Vanj raion, for example, due to the long-term involvement of AKF/MSDSP, nearly all farmers are involved organizationally in making decisions in their production areas and in accessing information and assistance resources. In other raions, qualitative interviews suggest that many farmers, especially women, are isolated from information and assistance resources, and are actively discouraged from seeking them out.

Natural Capital

Key Observations

- Land is a key form of natural capital. Responding farmers now recognize that they have long term rights to land, which provides an incentive to care for it and invest in sustainable environmental improvements. However, due to the shortage of arable land in relation to the rural population, median plot size of 2-3 hectares is fairly small for most farmers, and provides a major constraint for expanding production activities. Access to good irrigated land needed in many areas is a further constraint.
- Respondents rated pasture access and rotation as the most important problem related to land resources. In being perceived as a “major problem,” it ranked second out of 20 problems among upland respondents and third by lowland respondents. It also was perceived as being “much worse” now than it was 10-15 years ago. Landslides/mudslides, floods, and access to water for irrigation also were in the top five of “major problems” from the list of 20.

The qualitative findings included expressions of concern that small farms are not economically viable and that many agricultural activities such as marketing, irrigation, some types of agricultural production, etc., require larger areas of land and levels of production than those that exist within a family farm. However, the qualitative findings also indicate that the LRCSP allocation of land use rights to family farms provides households with stronger negotiating power and strengthens the likelihood that rural interests are treated fairly. That perception of fairness is quite important to limiting disputes, and is especially relevant in a post-conflict country such as Tajikistan. Further, if carried out carefully, it can also strengthen the likelihood of including vulnerable people, and addressing their interests.

Heritable land use rights to individuals or groups of individuals have made it possible for farmers to take control of their production and marketing decisions. However, holding a certificate to a piece of land by itself may not be sufficient to generate more productive farming. Access to pastures and water, two of the most important limiting natural factors in much of Tajikistan, are major constraints for many of those who have acquired land rights. Farmers are constrained in terms of the amount of land they have, and whether or not they have access to irrigation water. For most farmers, a major natural constraint is a lack of arable land. One indicator of the intensity of land use is the fact that only 0.7% of responding farmers indicated they had fallow land at present. Lack of access to good irrigated land was the number two reason cited by farmers for not breaking up a Collective dekhan farm into a family farm. More than a third of respondents said that not having enough irrigated land was a “very important” reason why farmers would not petition to restructure their Collective dekhan farms into family farms. Environmental impacts have not been uniform across regions. Erosion and soil management problems worsen as farmers try to raise crops on highly erodible lands.

Having confidence that one holds secure rights to land is a base needed for investment in land improvements. Farms with fewer than 25 members are the most likely to have invested in at least one farm improvement and to have made more total investments on their land than those on farms with more than 25 members/workers. Respondents have adopted a number of practices designed to cope with land resource limitations. More than three-fourths of respondents have invested in at least one environmental management practice. Results by raion show that in Hissor, Djabbor Rasulov, Zafarobod, Pandjakent, Jilikul, and Vanj, adoption of the 11 environmental practices has been high almost across the board. In others, such as Faizobod and Yovon, respondents report relatively low levels of adoption. These patterns are due to some extent to natural limitations, and also to projects that have emphasized one raion over another. Farmers tend to have little knowledge of a number of environmental practices such as drip irrigation, water harvesting, erosion control, integrated pest management, or biogas/solar energy/small hydro.

Physical Capital

Key Observations

- Lack of access to machinery was seen by responding farmers as the most important reason why they would not take the step of reorganizing their farms into family farms. Third most important was lack of access to irrigated water, irrigation equipment or high cost of irrigation. These perceived constraints must be taken into account by future projects that seek

to encourage farm restructuring, but also suggest that attitudes have not yet fully adjusted to the realities of the post-Soviet economic transition.

- Infrastructure problems such as poor roads and bridges was the most likely problem to be rated as “major” by upland farmers out of a list of 20 problems. Lowland farmers rated access to inputs (seed, fertilizer, etc.), access to mechanical equipment, and bad roads/bridges as the ninth, 10th and 11th-ranked “major problems” out of 20.

More than half the respondents rank access to machinery as the most important barrier to undertaking restructuring. Yet access to machinery becomes less important in relation to other problems in agricultural operations with only a quarter of lowland respondents and about 12% of upland respondents considering it a major problem. Factors that contribute to these attitudes include a lack of awareness about more relevant farming approaches and official and scientific advice that continues to stress the less-than-optimal land, labor and physical capital mix under Soviet collective farming for efficient agriculture. Farmers also face the challenge of addressing the accumulated neglect of infrastructure, especially for irrigation.

When farms were restructured in Tajikistan, machinery and other physical capital was often unaccounted for. As more farms are created, farmers lack access to machinery and other physical inputs for several reasons. First, with more farms and greater production, there is increased demand for equipment. However, the new farmers often lack collateral to use for the purchase of tractors and other machinery. In addition, small farm size means that farmers need to share equipment to make it cost-effective. Finally, increases in the price of gasoline and diesel fuel have made it impossible for some farmers to plow their lands.

Among upland farmers, poor infrastructure such as roads and bridges was rated a “major problem” by more farmers than any other problem area. More than a third rated it as a major problem. Upland farmers also selected poor infrastructure as the most important problem that is “much worse” than 10-15 years ago. Lowland farmers rated poor infrastructure 11th out of 20 problems, but seventh in terms of being “much worse” than 10-15 years ago.

Qualitative interviews in Zafarobod identified shortages of electricity as a major problem. This is due to problems with supplies from Uzbekistan.

Financial Capital

Key Observations

- Farmers receive income from a variety of sources, which provides some protection in case one source is lost. Migrant remittances are especially important in this regard. Farmers also receive in-kind income, and income from sale of livestock products from their household plots. Income amounts vary widely across raions, and are influenced heavily by income from farm sales and amount of migrant remittances.
- Almost half (49.2%) of respondents say they are better off now than they were 10-15 years ago. The main reason cited is that they are making more profit from the land. The second reason was an “increased standard of living.” Only 10% said they were worse off (the rest said they were the same as 10-15 years ago). Most of those who perceived they were worse off said it was because of higher prices.

- Respondents perceive that a lack of cash or credit is a major reason for not petitioning to break up a Collective dekhon farm and establish a family farm. A second but important perceived constraint is the cost of going through the process of farm restructuring.
- Out of the top six problems farmers in lowland and upland areas rated as “major problems,” four are financial problems in both areas. Access to credit, access to markets, farm debt, and a lack of clothing were in the top six in both areas. Access to credit and access to markets ranked first and second as “major problems” in lowland areas.
- Respondents report they are saving very little to cope with future financial problems. The majority had saved nothing in the last 2 years; 25% had saved just a little; only 12% felt they could cope with either a short term or a longer term problem. Upland farmers and family farmers tend to have more livestock, an alternative form of savings.
- According to the 18-item household possession index, in the past few years many farm households have accumulated possessions that go beyond basic needs, such as a car (39.3%) mobile phone (86.6%) and color TV (85.9%).
- The social tax, a tax of 15 Somoni per month levied on all farm shareholders, appears to have resulted in names of women and non-household heads being left off certificates to avoid the tax.

The variety of sources of income, especially migrant remittances, provides supplementary income and protection in the event of agricultural problems. Migrant remittances are also used to save money for large cash needs such as purchase of a car, construction of a house, or marriage. There were great variations in both income from sale of crops and migrant remittances across raions. Most farmers also have a household plot, and two-thirds of respondents sell some livestock products from their household plots. A total of 321 farmers (17.8%) reported no income from any source during the past year.

Most respondents who now have rights to land feel that they lack the financial capital needed to invest in and improve farm operations. They either lack access to cash and credit needed to acquire them or choose not to spend money for these purposes. Remittances from work in Russia also provide an important potential source of investment capital. It should be noted that at present, farmers are not able to use land as collateral for loans.

Of the choices for not wanting to break up a Collective dekhon farm, the second-highest-rated reason was lack of cash or credit to buy inputs, chemicals or seed. Ranking fourth was a second financial issue: perceived high costs of the process of establishing a family farm. Less important on the list, although still a concern of more than half of responding farmers, was a perception that debt attached to the land would be too high.¹³ On the other hand more than 80% said that an important or somewhat important reason to break up a collective farm was to make more money. When asked how changes in land restructuring and land use rights had affected them, the most common answer, selected by 167 farmers (9.3%), was an improved standard of living.

Most respondents (58.8%) say they have not been able to save any money over the past few years that might be used to help in the event of a natural disaster, agricultural or health or problem, loss of migrant remittance. Only 7.9% said they saved enough to cope with a short term

¹³ Debt, to many farmers, includes not only debt attached to the land, but also land taxes, water use fees, and other obligations

problem, and 3.4% said they saved enough for a problem lasting many months. These results indicate that most farm households lack cash savings to cope with loss of income. Farm heads were the most likely to say they could cope with short or long term problems, but for only 15%.

Farmers who receive land use rights incur a number of obligations, including long-term debt that might be attached to the land, and payment of land taxes and water use fees. One recent additional tax is the “social tax,” which is assessed at 15 somoni (roughly \$3) per month for each shareholder on the farm. Several reports have indicated that in some cases women are left off of certificate lists in order to avoid the social tax. Results showed that in about 10% of cases for both collective and family farms, respondents said women’s names were not always included on certificates. Issues of the social tax were given as reasons in about 40% of these responses. The cases in which women were excluded were much more frequent in some raions than others. In Pandjakent, for example, 70% of Collective dekhan farmers and more than half of the family farmers said women were excluded. In Djabbor Rasulov, 16% of Collective dekhan farmers said women were excluded. Officials and farmers made several suggestions about ways to deal with problems created by the social tax. One was to charge the tax only when farmers receive income. Currently, the tax is especially hard to pay prior to the harvest season when financial resources are very limited. Another was to limit the tax to the actual number of months farmers work. A third is to assess the tax quarterly, as is done for large collective farms, instead of monthly to reduce the number of trips and official stamps that are necessary. A fourth was to exempt a worker from the tax if he or she is already paying it on another farm.

Initial Assessment of Sensitivity and Adaptive Capacity Measures

An approach widely applied in analyzing vulnerability to climate change risks examines three aspects: (IPCC, 2007; Hahn, Riederer and Foster, 2009; World Bank 2011):

1. *Exposure*: the chance that assets and livelihoods will be impacted by risk factors;
2. *Sensitivity*: the susceptibility of assets and livelihoods exposed to risk factors;
3. *Adaptive Capacity*: the ability to deploy strategies to reduce or cope with the risk.

Other reports have documented exposure of Tajikistan rural households to environmental and climate change risks (e.g., World Bank, 2011), risks from poverty and lack of resources, and impacts and risks associated with farmland restructuring activities. The following examination of sensitivity and adaptive capacity adapts the analytical framework used for generating vulnerability indices. While not being a full application of the approach, and with shortcomings in the examination of exposure, the findings, a partial application, nevertheless, provides interesting insights when viewed in the context of perceptions of risks, that warrant further investigation (see Annex 3).

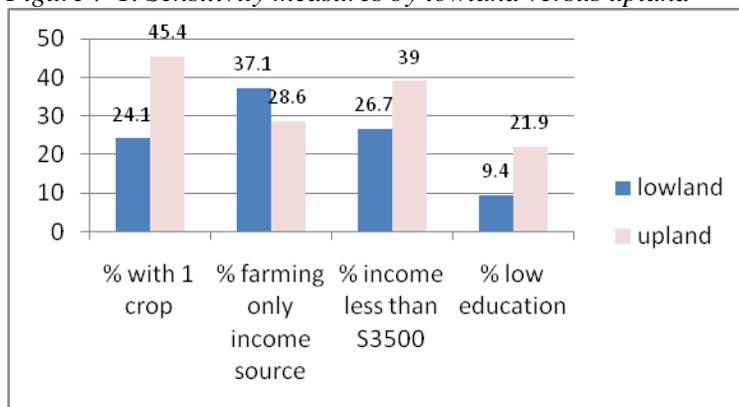
Sensitivity measures

Four measures of sensitivity were utilized in the current study. Each assesses a particular factor that contributes to increasing the sensitivity of rural households.

1. The percentage of households with only one crop grown on the land they cultivate (other than household plots and presidential plots). Farms that diversify production into more areas can protect themselves against poor prices, pests/diseases or other problems that might affect one's crop.
2. The percentage of households in which farming is the only source of income. Households that have income from several sources such as farming and household remittances, pensions, private businesses or social allowances are better able to cushion themselves against adverse developments in agriculture.
3. The percentage of households with total cash income from all sources of less than 3500 Somoni per year. This would place them in the lower third of the 1800 households surveyed. Median income is 9500 Somoni for these households.
4. The percentage of households in which the respondent has less than secondary complete education (less than high school) and has no specialized agricultural vocational or higher education.

Figure 7-1 shows the four sensitivity measures by lowland and upland farms. Lowland farms tend to be those that have the potential to grow cotton, while upland farms often emphasize crops such as wheat, potatoes and horticulture. Results indicate that upland farmers have much more sensitivity in terms of a lack of crop diversity, with almost half reporting only one crop compared to about one quarter of lowland farmers. Upland farmers also have greater sensitivity in terms of the percentage with low incomes and lower education. Lowland farmers are more likely to rely fully on their farm income.

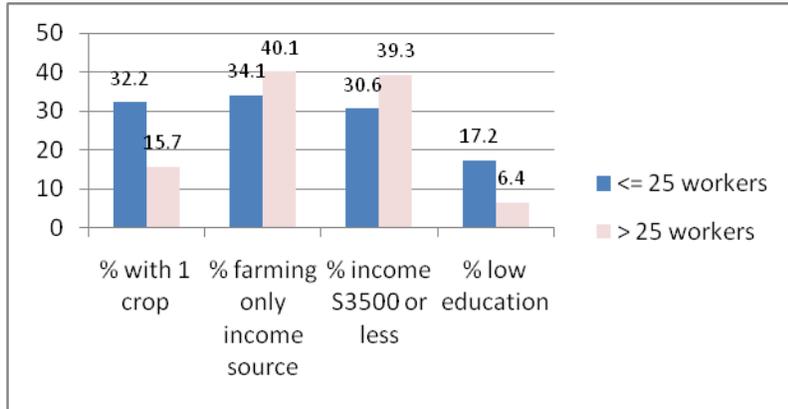
Figure 7-1. Sensitivity measures by lowland versus upland



Source: World Bank (2011)

Figure 7-2 compares respondents who are working on farms with 25 or fewer members with those who work on farms with more than 25 member/workers. Fully restructured family farms tend to have fewer members. Results indicate that those on farms with 25 or fewer members are twice as likely to have only one crop, but they tend to have more income and are more likely to have a source of income other than farming.

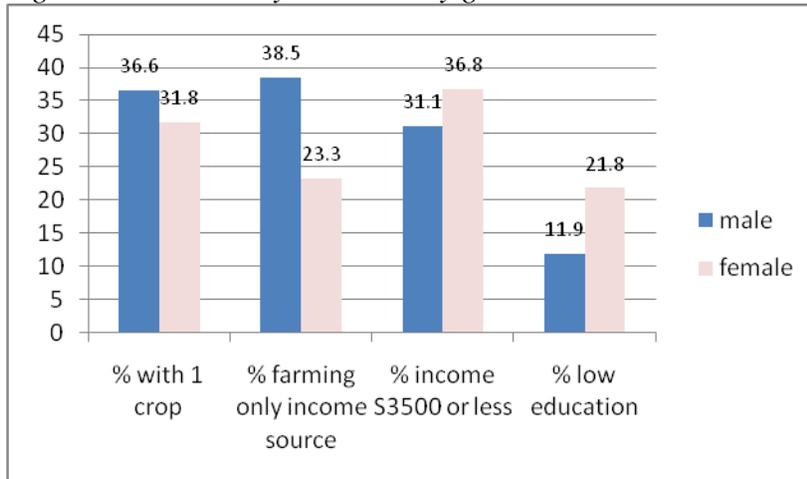
Figure 7-2. Sensitivity measures by whether respondents work on a farm with 25 or fewer members, or one with more than 25 member/workers



Source: World Bank (2011)

Figure 7-3 compares female and male respondents. Females are more likely to have other sources of income than farming, and as has been noted in other studies, they have less formal education and agricultural training. They also are slightly more likely to report low income.

Figure 7-3. Sensitivity measures by gender



Source: World Bank (2011)

Adaptive capacity measures

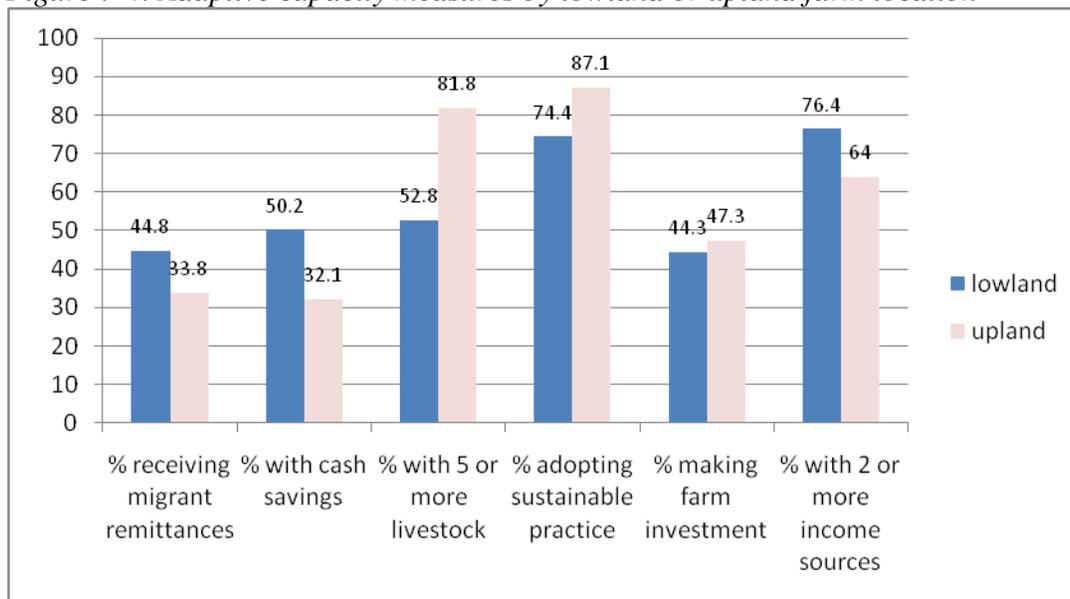
Adaptive capacity refers to factors characterizing rural farming households and their ability to address risks and problems through various coping and other strategies. Six factors were measured:

1. Percentage of households reporting that they received migrant remittances as a source of income during the past year. Because of poverty in the country and a lack of agricultural opportunity, many young men migrate to Russia and other countries to work. Income from migrant remittances constitutes a vital source of non-farm revenue for many households. Other than agriculture, migrant remittances constitute the second-most-important source of income for rural households.

2. Percentage of households reporting that they have been able to save money over the past few years in the form of cash, a bank account, gold or something else that could be sold as needed.
3. Livestock constitute another way in which households can build up reserves that can be used to reduce vulnerability. Livestock can be used as collateral for loans as well as providing a source of additional farm revenue. This measure was the percentage of farmers that have 5 or more livestock of all types. (Most households have at least one cow, so this measure examined those who have more than the minimum).
4. Percentage of households that have adopted at least one of 11 sustainable practices such as water-saving practices, intercropping of crops and trees, erosion control, integrated pest management, pasture improvement, biogas/solar/hydro power, or use of organic fertilizer.
5. Percentage of households that have invested in any specific productivity improvement. Examples include investments in irrigation systems, purchase of tractors or other mechanical equipment, purchase of horses or other animals to use for ploughing land, construction of buildings, or construction of fences.
6. Percentage of households with two or more income sources. Income sources included revenue from farm sales, wages, migrant remittances, private businesses, pensions, and social allowances.

Figure 7-4 shows adaptive capacity results for lowland and upland farm respondents. Lowland respondents are more likely to receive migrant remittances and have two or more sources of income. They also are more likely to report cash savings. Upland farmers are more likely to store wealth in the form of livestock and adopt at least one sustainable agricultural practice. The two groups are equally likely to report investments in farm improvements.

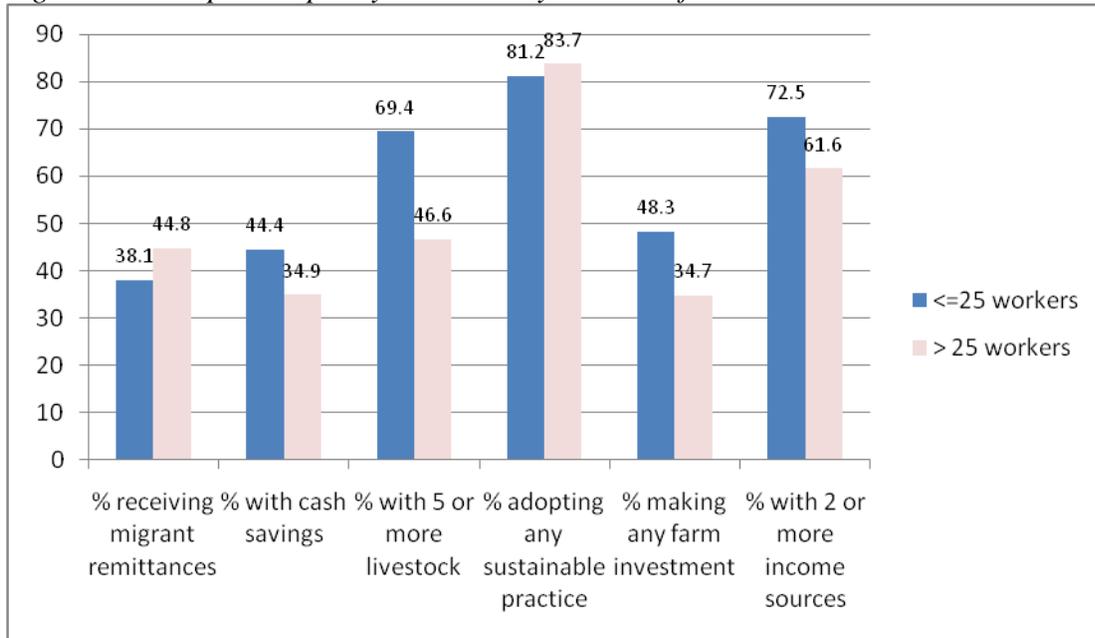
Figure 7-4. Adaptive capacity measures by lowland or upland farm location



Source: World Bank (2011)

Figure 7-5 shows adaptive capacity by the number of members on the farm—up to 25 members or more than 25 member/workers. Those from larger farms are more likely to receive migrant remittances. However, those from smaller farms are more likely to have both cash and livestock savings, receive income from two or more sources, or make investments in the farm. There is little difference between the two groups on the adoption of sustainable practices.

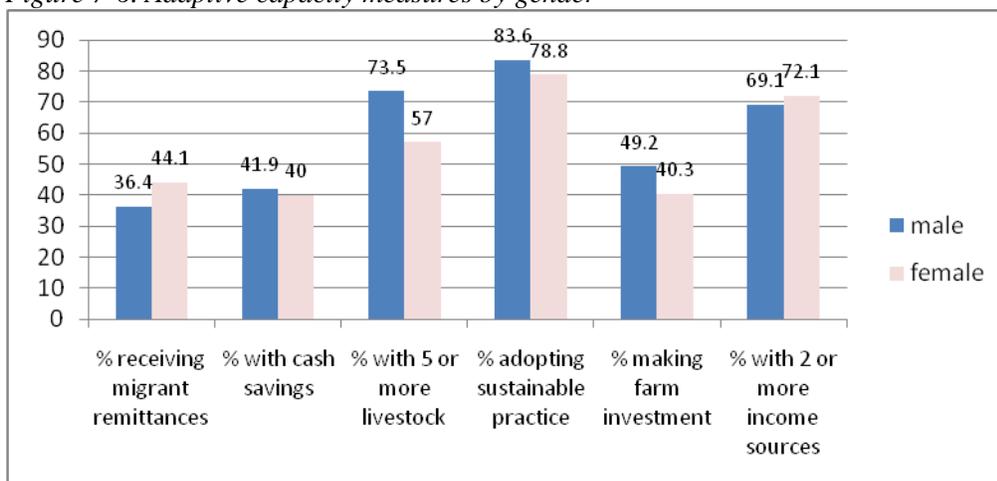
Figure 7-5. Adaptive capacity measures by number of members or member/workers on the farm



Source: World Bank (2011)

Figure 7-6 shows adaptive capacity factors by gender. Females are more likely to report receiving migrant remittances, but males are more likely to report having livestock, adopting sustainable practices, and making farm investments. Little difference is found for those with cash savings or having two or more sources of income.

Figure 7-6. Adaptive capacity measures by gender



Source: World Bank (2011)

Chapter 8: Conclusions and Recommendations

The significant variation across raions makes broad generalizations difficult and also indicates to policy makers that they must be sensitive to these differences when developing future project activities and policies. The conclusions presented below identify some general trends. Throughout the report, an attempt has been made to note raions with distinctly different patterns.

Conclusions

Land use rights certificates

Issuance of family farm certificates has accelerated, but delays, errors and active resistance still persist. Since 2009 there has been significant acceleration in the issuance of land use rights certificates for family farms. Both policy reform and improvements in operational capacity have supported LRCSP and to a lesser extent non-LRCSP efforts to accelerate farmland restructuring. Although the cost of establishing a family farm is perceived as an important barrier, the qualitative findings show that farmers in LRCSP sites acknowledge speedier, no-fee processing of applications and delivery of certificates. Qualitative interviews with farmers continue to document delays and barriers in issuing certificates through regular land committee channels. In some cases the delays are due to a lack of experience by officials and applicants leading to mistakes that have to be corrected later. In other cases, active resistance of local officials to restructuring either delays or prevents restructuring activities. Waits of years for certificates were not uncommon in some areas.

Information seeking and knowledge

The study indicates that rural people have basic knowledge about their rights, but do not understand details of the farmland restructuring process. Furthermore some women have almost no knowledge. Both the 2007 and 2011 surveys documented that the majority of respondents have at least some basic knowledge of their land rights as well as that farmland restructuring activities are occurring. They know, for example, they could have rights to pass along to heirs, and that with these rights, they can make important decisions about what to plant on their land. This knowledge is what we might call “awareness” of land restructuring opportunities.

Raising levels of knowledge about specific laws regarding land restructuring and land use rights has proven to be a slow process. This is despite educational efforts by many projects. Few farmers know the specific differences between types of farms, and fewer know specific legal steps that would need to be taken to fully restructure a farm. Perhaps a goal of trying to bring about high levels of knowledge on this topic among farmers is unrealistic for several reasons. Very large numbers of farmers are involved, they are not easy to reach, and the types of knowledge of land restructuring are complicated and confusing even to officials.

Freedom to Farm

The confidence of farmers in truly deciding how to use their land increased significantly. This finding is important in the context of the 2009 Government Decree and the commitment to the freedom of farmers. In 2007, slightly more than a quarter of farmers strongly agreed that they could make decisions. By 2011, the number is closer to half of farmers. An exception is cotton production, where almost half of men “strongly agree” they can make decisions, but only 29% of the women do. As expected on collective farms with more than 25 members or lowland areas, the farm head continues to take the lead in planting decisions. Upland farmers are more likely to say they make farming decisions (76.7%) than lowland areas (33.7%) where cotton predominates. However, the study also shows there are significant differences between raions within cotton-growing areas, which indicates that it is possible to have freedom to farm even in these areas. There also are still areas, such as Tojikobod and Konibodom, where local authorities pressure family farms to grow a certain amount of some crops.

Gender issues

- (a) ***Cultural roles.*** Conservative practices and attitudes towards women, which are still maintained in some regions of Tajikistan have a negative impact on their participation in various processes. In Rasht, Tojikobod and Kuhistoni Mastchoh, norms make it difficult for women to have contact with outsiders, thus fewer women were included in the survey. This also makes it difficult for women to meet with officials and gather information about agricultural opportunities. Despite the fact that it is widely acknowledged that women carry out most of the agricultural labor in the country, few women are farm heads. Among survey respondents, only 14% of farm heads were women.
- (b) ***Information and knowledge.*** Women reported significantly fewer information sources about land restructuring than men, and also knew slightly less than men on a knowledge test. In 2011, more than a quarter of women say they have no sources of information about this topic. Although this number has declined from one-third in 2007, it still indicates that special efforts will be necessary to reach women.
- (c) ***Impact of certificates and the social tax on women.*** When land restructuring takes place, women are less likely than men to have their names placed on certificates. Since the certificate carries with it long term rights to land, omitting a woman’s name can have long-term consequences. Reasons for omission include norms that emphasize more importance to including men’s names. However, a social tax levied on all shareholders listed officially on a certificate is another important reason. Survey results suggest that women are excluded from certificates in about 10% of cases, and the social tax was mentioned as a reason in about 40% of these cases.

Social tax. The social tax of 15 Somini (roughly \$3) per month per farm worker was criticized by a number of farmers and officials during qualitative interviews. Its impact on women was discussed above. In addition the social tax has a number of other negative consequences. For example, young adult farm members are omitted to save costs, each family farmer must pay this tax each month for members on the farm, even when members might only be working a few months. Those who work on more than one farm often find that they have to pay the tax twice, once for each farm. Since farms tend to be rather small and labor-intensive, the social tax can be

substantial even for a small-sized farm. Failure to pay the social tax means that a farmer can lose rights to land.

Environmental problems, knowledge and practices.

Pasture access and rotation was ranked as the most important natural resource related problem. It also was perceived as being “much worse” now than it was 10-15 years ago. Landslides/mudslides, floods, and access to water for irrigation were among the top five “major problems” in the list of 20 issues. In general, except for mudslides/landslides and pasture issues access and rotation, lowland respondents expressed more concern about environmental problems currently. While self-assessments of knowledge of environmental practices varied, farmers tend to have little knowledge and low adoption rates of practices such as drip irrigation, water harvesting, erosion control, integrated pest management, or biogas/solar energy/small hydro compared to intercropping and use of windbreaks.

Access to resources and markets

- (a) ***Labor.*** Qualitative results suggest that there is sufficient labor available on most farms to carry out current agricultural tasks. At Konibodom and other sites it was noted that the actual number of people working on farms declined over the past few years, but farm production has not been affected. Many young men are working in Russia, and the burden of much farm work has shifted to women, yet labor is not often mentioned as a serious constraint.
- (b) ***Water.*** On the other hand, lack of access to water is a serious constraint that substantially affects vulnerability since family farmers borrow money to plant cotton and buy needed fertilizer and chemicals, and then must have water to grow a crop.
- (c) ***Pasture.*** Both upland and lowland farmers consider pasture access a serious problem. Livestock production is part of the livelihood strategy of many households, and livestock is form of savings to be drawn upon in times of stress, especially in upland areas. Nationally, livestock numbers are increasing, raising concerns about the long-term sustainability of pasture and grazing resources.
- (d) ***Credit.*** Poor access to credit is considered an important barrier to farmland restructuring and is also perceived to be a major problem for agriculture by lowland farmers more than any other problem. Qualitative findings indicate that the more vulnerable, e.g., women, have much less access.
- (e) ***Markets.*** Lack of access to markets is considered an important barrier to farmland restructuring and is considered among the top five problems in agriculture for both upland and lowland farmers.

Livelihood outcomes and vulnerability dimensions

- (a) ***Trends.*** Study findings show that *people consider themselves to be better off than before*, but that *migrant remittances are an important income source*. Between 2007 and 2011, the data show a 10% decline in the number farmers who rely solely on farming for income, and a 10% increase in those who say that farming is no longer a significant source of income. Qualitative interviews show uneven results. In Zafarobod, for example, improvements in

cotton prices coupled with farmers' ability to shift production and make investments led to income that permitted farmers to pay down their debts. In contrast, in Faizobod, respondents indicated that migrant remittances were the key factor in improving their financial condition. A decline in the percentage of households receiving migrant remittances since 2007 suggests that due to the global economic slowdown and certain political events between Russia and Tajikistan, further reductions in migrant remittances may be likely. This would increase vulnerability of many Tajik households.

(b) *Group comparisons*

- (i) In general, lowland respondents were more likely to rate problems in agriculture as “major” across all categories. Upland farming could be considered more sensitive overall in comparison with lowland, due to higher numbers growing only one crop and reporting lower income and education levels. Potential to adapt is a more mixed outcome, with lowland farmers having more cash savings and income sources. On the other hand, upland farmers have adopted more environmental practices, made marginally more farm investments, and possessed livestock, which can be a source of cash.
- (ii) Respondents on farms with 25 or less members perceive that environmental and climate change related problems are “much worse” now than they were 10-15 years ago. In terms of sensitivity, family farms with up to 25 members differ from larger farms with more growing only one crop. It is possible that respondents on larger farms were reporting all crops grown on the farm. For both types of farms, much less than half reported growing only one crop. However, *family farms exhibit* more factors that contribute to potential adaptive capacity with more reporting *cash savings, multiple income sources and livestock*. Family farms also invested more and have generally adopted *more environmental practices*. Between 2007 and 2011, farmers increased the average number of crops grown on their farms.

Transition context and issues

A combination of farmland restructuring and freedom to farm, although necessary for the incentive framework for agriculture and the transition from a command economy to a market approach, are not sufficient. As noted by Swinnen and Rozelle (2006), countries that are growing steadily a decade or more after their initial reforms have managed (a) to create macroeconomic stability; (b) to reform property rights; (c) to harden budget constraints on collective and similar farms; and (d) to create institutions that facilitate exchange and develop an environment within which contracts can be enforced and new firms can enter. Other aspects, related to changes in attitudes, new uses and forms of social capital, and overall geographic shifts, for example, also need to take place. In comparison to other countries in Eastern Europe and the former Soviet Union, Tajikistan is at a relatively early phase of the transition. Based on the experience from other countries, these adjustments need to evolve gradually and will take time. Experience in many other Eastern European and former Soviet Union countries has shown that once use rights are reallocated on a widespread basis, rural people develop new processes of collaboration and organizational arrangements to address requirements that cannot be efficiently handled on an individual small farms. The study outlines some of the initial steps rural people are taking in this

regard. Efforts need to continue to focus on maximizing the environmentally sustainable productive potential of family farms, fostering entrepreneurial competition among them and building new arrangements to address collaboration requirements.

It is critical to consider the alternatives to farmland restructuring in the Tajikistan context. Development experience to date indicates that maintaining or even building the business capacity of the collective farms is unlikely to build the incentive framework and associated agricultural growth. Furthermore, qualitative findings from the study indicate that collective farms are associated with more inequality in power relationships and economic status, and this increases the risk of conflict over the long term. Insisting on a minimum farm size, in the Tajikistan context of a high rural population relative to the highly limited amount of arable land, would potentially contribute to landlessness, and further increase poverty and dependency.

Recommendations

1. ***Strengthen and expand farmland restructuring in order to ensure tenure security and increase beneficial livelihood outcomes.*** In addition to providing donor support, incorporate as much as possible the LRCSP “good practice” on certificate issuance into other government programs. Although it may not be feasible for the regular government program to adopt the no-fee arrangement or the spatial technology in the short term, ways to address these factors should be considered in the development of the longer-term government strategy. Continued commitment to the issuance of family land use rights certificates is imperative. Future legislation, including proposed amendments to the Land Code, would create conditions for marketable land rights and those without legal rights are likely to be particularly vulnerable to land grabs, etc.
2. ***Although there has been progress in Freedom to Farm, government interference in agriculture needs to be further reduced.*** Freedom to decide what to plant, when, using which inputs or type of financing makes a difference on how farmers are able to adjust to their own local situation. However, farming independently does need to take account the constraints of the country’s resource base and environmental fragility. Family farms will need continued support and guidance to manage land resources responsibly through efforts similar to those, such as CAWMP, LRCSP and others that supported the environmental management of agriculture and other measures that can reduce sensitivity and increase adaptive capacity.
3. ***Improve awareness raising and training activities on farmland restructuring, and give more attention to gender inclusion.***
 - Use mass media, seminars, etc. to increase awareness of the possibilities, and include places farmers can go locally (perhaps through contracts with NGOs) to get the information and assistance they need. When people decide independently (or when an effort such as the World Bank-financed LRCSP effort is going to be made in a particular area), provide intensive communication efforts at that time. If the World Bank LRCSP or a comparable project is about to operate in a particular area, focus on the specific geographic area involved. Test to ensure that people are learning what they need to know to make informed decisions.

- Build realistic case studies illustrating the consequences of land restructuring for each local area. The focus groups showed that a particularly influential and educational way for women to learn is to hear from other women who have gone through the process and are willing to talk about the costs and benefits on their farms.
 - Highlight key issues such as debt associated with land and what to do about it, the social tax and the consequences of being listed or not on certificates, taxes associated with the land, alternative planting strategies, etc. Instead of focusing on knowledge of specific laws (as in handing out copies of the laws themselves), focus on key issues, and bring in laws as necessary to illustrate how to deal with problems that might arise. In other words, focus on building skills to solve common problems rather than just trying to increase knowledge about laws.
4. ***The burden and implications of the social tax on farm members, especially on family farms, is a serious issue, and warrants immediate attention and further investigation.*** Study findings indicate that the current social tax policies appear to discourage the inclusion of women and other adult family members other than the household head from being listed as shareholders on family farm certificates. Qualitative findings indicate that the social tax can even discourage poor households from seeking family farm rights altogether. However, a full analysis of the social tax was beyond the scope of this study. Analysis is now required to explore alternative approaches to social protection. For example, good practice from elsewhere uses policies of income-based taxation rather than a flat rate per head. Any analysis should also consider not only issues of social tax policy but also of implementation. In Tajikistan, for example, are there differences between various groups (including family farms versus larger farms versus various forms of non-agricultural enterprises) in social tax collection rates (e.g., enforcement, compliance) and actual access to and flows of social protection benefits?
 5. ***Strengthen farmer-to-farmer learning about agriculture and access to resources and markets.*** Farmers already rely on their peers for information, and the findings from CAWMP indicate that informal farmer networks are promoting both innovation and replication. Thus, in addition to conventional methods of communication and learning, e.g., advice through fee-for service, JDCs, etc., farmer-driven initiatives offer ways to share knowledge and build networks of information, innovation and cooperation that can increase the confidence of farmers to operate independently. Initiatives that can be strengthened and expanded include farmers' field schools, competitions that highlight good practice, innovation and early initiators, and farmer exchanges.
 6. ***Support local empowerment through associations and groups.*** Promoting informal and formal groups, examples of which are already active, (e.g., WUAs, machinery user groups, pasture user groups), can provide local mechanisms to help access and maintain machinery, infrastructure, pasture, credit and other inputs. Producer associations and groups provide similar opportunities for farmers to access markets and obtain fairer prices for their products.

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Glossary

Adaptive capacity - the ability to deploy strategies to reduce or cope with risks of shocks/stresses

Climate change means a change of climate, which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods (IPCC 2007).

Collective dekhan farm - (CDF - Partnership dekhan farm) - A farm established on the basis of land and property shares contributed by members from different families and governed by a joint activity agreement.

Common Interest Groups - (CIGs) are collections of villagers who have common interests and come together to share information and work together around some unifying issue. CIGs were the major implementers of rural investments in the Community Agriculture and Watershed Management Project

Exposure - the chance that assets and livelihoods will be impacted by risk factors

Family dekhan farm - A farm established on the basis of land and other property jointly controlled by the members of one family. Based on general agreement, family dekhan farms have less than 25 members.

Focus group - A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a product, service, concept, advertisement, idea, or packaging

Hashar – The traditional system of shared community labor in Tajikistan

Household plot – a small plot of land assigned to a rural family for agricultural production that serves the family’s subsistence needs and optimally allows sale of surplus products; the household plot usually consists of a parcel adjoining the family’s house plus one or several parcels in fields surrounding the village (also see Presidential land below)

Hukumat - local government usually at raion and jamoat levels

Individual dekhan farm – A farm established on the basis of land and other property controlled by an individual.

Individual interview – A qualitative research interview with a single respondent

Jamoat – Third-level administrative division in the Republic of Tajikistan, includes several villages (there are approximately 360 Jamoats in Tajikistan)

Jamoat Development Committees - (JDCs) also known as **Jamoat Resource Centers (JRCs)**

- established by the UNDP Communities Programme (and other donor led initiatives) to mobilize civil society in the definition of local development priorities and, in the absence of functioning local government, to target project funds at prioritized social infrastructure investments. They also provide legal and technical advice.

Kolkhoz - centralized, large collective farms that were established during Soviet era that were owned and managed by State

Land classification - As used in agricultural statistics in Tajikistan (e.g. TAJSTAT 2010), the total territory is divided into **non-agricultural land** and **agricultural land**. Agricultural land is divided into 5 categories in Tajikistan (and each of the categories is divided into irrigated and non-irrigated):

- (a) **Arable land** is the land under annual crops, temporary meadows for mowing or pasture, and land temporarily fallow (less than five years). The actual area under annual crops is reported separately as “sown land”
- (b) **Fallow land (temporary)** is arable land that is not seeded for one or more growing seasons. The maximum idle period is usually less than five years. (This is not abandoned land, which is not captured by the statistical system)
- (c) **Permanent crops** is the land cultivated with long-term crops which do not have to be replanted for several years (such as orchards and vineyards); land under trees and shrubs producing flowers; and nurseries (except those for forest trees, which should be classified under "forest"). Permanent meadows and pastures are excluded from land under permanent crops.
- (d) **Hay meadows** is land used for the production of permanent grasses for hay
- (e) **Pastures** is land with natural grasses or vegetation which can be used for grazing

Legal Aid Center (LAC) - Their programs may include field training but also activities in advocacy for defending legal rights of rural citizens. Local lawyers from the NGOs assist farmers in negotiations with state institutions and private parties and also represent farmers in court. A number of donor agencies have supported LACs throughout the country.

Limited Liability Company (LLC) - a flexible form of enterprise that blends elements of partnership and corporate structures

Mahalla- local community or neighborhood, governed by a non-elected Council or Committee of usually 5-11 elders

Mean income - mean or average income is computed as the total or “aggregate” income divided by the number of units in the population

Moderator - a person whose role is to facilitate discussion, keep time, deliver the script, and establish a trusting relationship with focus group participants

Oblast – Province, first-level administrative division in the Republic of Tajikistan (there are 4 oblasts in the RT)

Open Joint Stock Company - A joint stock company that has publicly-traded shares which can

be traded without the permission of other shareholders and is not subject to other limitations. An open joint stock company can have an unlimited number of shareholders.

Pilot sites –sites or raions where the first pilot projects were implemented

Presidential land – land distributed to rural families for household farming by two presidential decrees (1995: Presidential Decree “On Assignment of 50,000 hectares of Land for Household Farming”; 1997: Presidential Decree “On Allocation of 25,000 hectares of Land for Household Farming”).

Presidential Plot- The plots allocated by presidential decrees in 1995 and 1997 in an effort to improve the food security situation of the population. The average size of the presidential land was 11.5 sots (0.115 Ha).

Raion – District, second-level administrative division in the Republic of Tajikistan (there are 58 raions)

Sensitivity - the susceptibility of assets and livelihoods exposed to risk factors

Social Union for the Development of Village Organizations (SUDVO) – A federation of village organizations supported by AKF/MSDSP working often at the equivalent of the jamoat level.

Sustainable land management (SLM) is the use of land resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and ensuring their environmental functions (WOCAT 2007).

Tashabuskor - a rural activist who is knowledgeable on land-related issues. They hold focus groups to help identify problems in their local areas. They also provide basic consultations to farmers on land-related questions and refer farmers to legal aid centers as necessary.

Village Organization (VOs) – an institutional structure at the village level through which people can determine priority needs and decide how best to manage common resources in the interests of the community as a whole, and represent the community to the government and to other development partners, including NGOs and the private sector. VOs are found in areas where AKF/MSDSP is active.

ANNEX 1: Complementarity with National, World Bank, DFID and USAID Strategies and Programs

The purpose of this Annex is to provide further detail on the projects and strategies whose objectives were/are linked to the impacts measured in this study. The study focused primarily on projects of the World Bank, USAID and DFID, with the former two agencies collaborating in fieldwork and analysis.

The relevant projects include the following.

- (a) **World Bank** – The Community Agriculture and Watershed Management Project (CAWMP) and the Land Registration and Cadastre System Project (LRSCP), have sustainable agricultural land management and farmland restructuring objectives, respectively. Both projects have also focused on strengthening technical knowledge and skills, market orientation, and self-reliance of rural communities.
- **LRCSP** – Project implementation started in 2006. In 2009, the project design was adjusted to take into account a slow start-up and provide a stronger focus on family farms. The land reform agenda was also included as a key element of the **Policy Development Program Grant 4 to 6** in 2009. As of December 2011, 37,500 land use rights certificates for family farms had been issued under LRCSP. By the end of 2012, 65,000 certificates are expected to be issued as a result of both investments.
 - **CAWMP** – The project is in the final stage of implementation with completion due in April 2012. Over 40,000 households in more than 400 upland villages have designed and are managing 3,800 plus investments in farm production, land resource management and rural infrastructure.
- (b) **USAID** – Land Reform Project in Tajikistan (LRPT) seeks to bring reform in policy and land legislation and supports farmland restructuring. The project also provides direct legal assistance to farmers; builds capacity for lawyers, judges, and government officials at the local level; and promotes training and outreach.
- (c) **DFID** – The Rural Growth Programme (RGP – 2010-2012) aims to improve the local environment for income generation and employment creation in Sughd Oblast, including for women and the poor. RGP provides business advice and credit, and targeted assistance to local government to support private sector development and improve the business environment. The Tajikistan Agricultural Finance Framework (TAFF)/GIZ Sustainable Economic Development Programme supports the overall TAFF goal of restructuring and diversifying the agricultural sector.

The Study is relevant to the following strategic efforts.

National Strategies: The Study is consistent with Tajikistan’s National Development (2015) and Poverty Reduction Strategies (2010-2012). These strategies emphasize the need to promote economic growth, especially in rural areas, and recognize the importance of addressing

environmental issues, including land management, for the country's development and poverty reduction goals. The Government is working to expand agricultural capacity through several measures including improving the security of land tenure and farm restructuring to strengthen farmer independence to choose crops based on market forces and managing land sustainably.

Climate Change Resilience Agenda: The findings are expected to inform strategies to reduce climate change risk in the Pilot Program for Climate Resilience (PPCR) in Tajikistan. Sustainable land management has been identified as a key area for PPCR investment. However, the extent to which land insecurity could be a major obstacle to the adoption of improved practices and technologies to build resilience needs further investigation. Site-specific data and analysis from the Study will strengthen PPCR preparation activities and investment design. The findings are of interest to a number of donors that have crosscutting concerns regarding resilience to climate change in their portfolios. Additionally, the Study provides insight into broader environmental issues, which are of increasing concern in Tajikistan among donors such as the Global Environmental Facility (GEF).

World Bank Group

- The proposed Study contributes to the Country ***Partnership Strategy (CPS) (2010-2013)***, under the objectives of: i) reducing poverty and vulnerability including addressing food insecurity; ii) post-crisis recovery through supporting increased agricultural production; and iii) reducing climate change risk, natural disasters, and cross-cutting efforts to improve gender disparities. The CPS also specifically lists the vulnerability Study as an analytical activity.
- The Study assists in measuring the impacts of Tajikistan's ***Policy Development Program Grants 4 to 6*** targets related to land use rights certificate issuance, especially regarding Freedom to Farm. At a regional level, the Study is consistent with ECA's strategy, which highlights post-crisis increases in poverty and vulnerability as a key concern, and includes climate change action for sustainable growth as one of its three focus areas.
- ***Rural Investment Climate Assessment (RICA)*** – The Study has synergies with the RICA for Tajikistan. The emphasis of this Study on farmer/household motivations and behaviors in response to project interventions complements the broader, country-wide RICA that seeks to understand constraints to private sector rural business development, especially concerning the diversification out of cotton.
- ***Mainstreaming Governance in Tajikistan*** – The Study is relevant to the subcomponent on agriculture providing additional insight into household/farm knowledge of land restructuring procedures.
- ***Trust Fund supported Capacity Building for Poverty Analysis***
- ***Land Reform Agenda*** – Inequities and associated conflicts in the land allocation process are key concerns. Current allocations reflect both historical land grabs and groups that have been excluded altogether. Future trends in a more market-driven agricultural sector will likely include poorer farmers selling or even losing land use rights to more productive farmers. Addressing these concerns requires a broad set of approaches and tools. LRCSP and the PDPOs' contribute through their emphasis on family farms and an on-going policy dialogue with Government and other donors. The Study proposes to contribute through

examining farmer/household perceptions of fairness of past and current allocation processes, and identifying mechanisms used for conflict resolution.

DFID: The Study contributes to RGP and the Sustainable Economic Development Programme, which are consistent with the new UK coalition Government's objective to promote wealth creation. Private sector development is one of the three focal areas in DFID's Central Asia Strategy (CAS) and inclusive growth is an overarching regional objective.

USAID: The proposed Study contributes to USAID's program of economic growth, which includes support to market-driven land policies and farm restructuring, and improving agricultural productivity in Tajikistan. The findings are expected to help in the assessment of the effectiveness of freedom to farm principles, and the knowledge among farmers about their land tenure rights and restructuring processes and provide insight into strategies to address gender inequalities in land reform.

ANNEX 2: Demographic Comparisons of the Eight Repeated Raions for 2007 and 2011

In the 2011 survey, eight of the 18 raions were the same as those surveyed in the baseline survey conducted in 2007. The same survey methodology was used in both 2007 and 2011. In each raion, a total of 100 farmers were interviewed. To be eligible, the farmer had to be cultivating the land including former Soviet-style farms, Collective Dekhan farms, Family farms, Individual Dekhan farms, or Cooperative/Association Dekhan farms. (Those who were cultivating only household plots or presidential plots were excluded). In each of the eight raions in both 2007 and 2011, the same five jamoats in the raion were selected, and in each jamoat, the same two villages selected in 2007 were again re-surveyed in 2011. A total of 10 households were randomly selected for interviews in each village. Thus, in each jamoat, a total of 20 individuals were interviewed. No attempt was made to interview the same individuals in the same households. However, because individuals were randomly selected from the same raion/jamoat/village as those surveyed in 2007, some comparisons can be made to assess changes over the period.

Prior to conducting the analysis, a comparison was made of the demographic characteristics of individuals surveyed in each raion between 2007 and 2011. Demographic comparisons included sex of respondents, ethnicity, age, education and agricultural training, marital status, and whether or not someone in the household was working abroad. Results of the comparisons are shown in the tables below. Any difference of more than 10% in each category was noted.

Results suggest that the respondents in Zafarobod were different in 2011 than in 2007. Most important, the ethnicity of those interviewed in 2007 was 48% Tajik and the rest Uzbek. In 2011, 74% identified themselves as Tajik. Differences in education were seen, with 27% of the current sample saying they have a higher education degree compared to 6% of the 2007 sample. In all other raions, the ethnic percentages of respondents remained rather constant. In Pandjakent, there was a 20% increase in female respondents, and a dramatic increase in reported agricultural vocational training from 10% in 2007 to 66% in 2011. In other respects, however, respondents remained rather constant. In Yovon, there was a 14% increase in female responses that is likely linked to a reported decrease in formal education, and there were slightly more single respondents, but in other respects, they were similar. Similarly, in Faizobod, there were 19% more female respondents and a reported decrease in formal education. However, in Faizobod, there also was an increase in reported agricultural vocational training and agricultural higher education.

In Konibodom and Vanj, there were no major differences between the two time periods. In Rasht, results were similar except for a reported increase in agricultural vocational training. In Qabodiyon, the only major change was an increase in the percentage of households with someone working abroad from 47% to 70%.

Based on these demographic results between 2007 and 2011, it was concluded that overall, comparisons can be made between the survey results in 2007 and 2011. Caution is needed for results from Zafarobod, where a significant change in reported ethnicity has taken place.

Table A2-1: Percentage of respondents from 2007 and 2011 who are male/female and who report that their ethnicity is “Tajik.”

	2007		2011		2007 Ethnicity	2011 Ethnicity
	Male	Female	Male	Female	Tajik	Tajik
Zafarobod	68	32	79	21	48	74
Pandjakent	61	39	41	59	41	44
Konibodom	49	51	45	55	36	35
Qabodiyon	41	59	42	58	49	40
Yovon	63	37	49	51	72	72
Faizobod	87	13	68	32	99	98
Rasht	86	14	93	7	100	100
Vanj	51	49	60	40	100	100

Source: World Bank and USAID (2008); World Bank (2011)

Table A2-2: Percentage of respondents from 2007 and 2011 completing each general education level

	Primary incomplete		Secondary incomplete		Secondary complete		Secondary Technical		Secondary Vocational		Higher incomplete		Higher Complete	
	07	11	07	11	07	11	07	11	07	11	07	11	07	11
Zafarobod	1	0	17	10	52	32	10	20	11	9	3	2	6	27
Pandjakent	2	0	27	22	34	50	11	5	9	5	1	2	16	16
Konibodom	5	1	14	3	69	77	6	8	4	8	1	0	1	3
Qabodiyon	6	3	10	8	53	74	3	6	11	1	0	2	17	6
Yovon	5	1	12	22	44	60	6	3	10	4	3	1	20	9
Faizobod	5	10	12	14	39	49	13	10	7	2	1	7	23	8
Rasht	2	2	11	9	48	37	9	21	15	6	3	4	12	21
Vanj	3	0	8	4	36	37	7	11	18	18	4	7	24	23

Source: World Bank and USAID (2008); World Bank (2011)

Table A2-3: Percentage of respondents from 2007 and 2011 completing agricultural vocational training or agricultural higher education

	No agricultural education		Vocational training		Higher agricultural education	
	2007	2011	2007	2011	2007	2011
Zafarobod	94	66	5	32	1	2
Pandjakent	84	23	10	66	6	11
Konibodom	96	96	4	2	0	2
Yovon	81	91	7	6	12	3
Qabodiyon	92	96	4	1	4	3
Faizobod	93	67	1	17	6	16
Rasht	82	65	14	29	4	6
Vanj	92	89	4	8	4	3

Source: World Bank and USAID (2008); World Bank (2011)

Table A2-4: Percentage of respondents from 2007 and 2011 by marital status

	Married		Single		Divorced		Widow	
	2007	2011	2007	2011	2007	2011	2007	2011
Zafarobod	96	92	0	6	1	2	2	0
Pandjakent	89	92	1	4	1	1	9	3
Konibodom	96	92	0	2	0	2	4	4
Yovon	82	76	12	22	2	0	4	2
Qabodiyon	84	93	8	5	2	0	6	2
Faizobod	94	85	2	2	2	4	2	9
Rasht	92	90	8	10	0	0	0	0
Vanj	93	91	2	3	1	0	4	6

Source: World Bank and USAID (2008); World Bank (2011)

Table A2-5: Percentage of households that have at least one person working abroad: 2007 and 2011

	Percentage of households with one person working abroad	
	2007	2011
Zafarobod	16	29
Pandjakent	68	67
Konibodom	63	57
Yovon	63	53
Qabodiyon	47	70
Faizobod	56	54
Rasht	64	74
Vanj	70	61

Source: World Bank and USAID (2008); World Bank (2011)

Table A2-6: Average age of respondent: 2007 and 2011

	Average age of respondent	
	2007	2011
Zafarobod	40.8	47.4
Pandjakent	46.2	44.3
Konibodom	45.6	45.4
Yovon	43.2	40.1
Qabodiyon	42.8	41.7
Faizobod	52.3	52.5
Rasht	45.4	51.2
Vanj	50.6	49.2

Source: World Bank and USAID (2008); World Bank (2011)

ANNEX 3: Future Topics and Analyses

- The 2007 and 2011 studies have shown that land restructuring is a long-term process that requires both quantitative and qualitative monitoring; such as the number of certificates issued, but also on how the process is changing behavior and attitudes. Future projects would be wise to include such similar analyses to use as their baseline.
- Improvements to this study are also possible. For example, the vulnerability analysis would benefit significantly if it were linked to additional statistical information such as weather data and other indicators of exposure, which would provide further insights into climate change resilience.
- The issue of the social tax warrants further investigation given the findings of the study. Analysis of the actual application of the tax is needed, as well as the distribution of resulting benefits to the population. Alternatives to the flat rate per head policy need to be investigated, e.g., income-based approaches on a family farm basis, for their administration and flow of benefits.
- Better understanding of impacts of land use rights on livelihood security and vulnerability may be possible through comparing those with valid land use certificates versus perceived land use rights versus no family farm land use rights at all. This investigation would have to take into account the difficulties of verifying the validity of certificates, and also of identifying comparable control groups for the “without certificate” situation in rural settings.
- The sample size was limited and greater coverage at the raion and jamoat level would help support some of the observations found here.
- The qualitative aspects of this report could also be supported with a more comprehensive institutional and stakeholder analysis. For example, the analysis could help in confirming which formal or informal institutions achieve better outcomes and earn farmer trust.
- The data generated in this study could also complement other studies such as those related to poverty and other social, distributional or income issues.



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