TAJIKISTAN

WELFARE IMPLICATIONS OF COTTON FARMLAND PRIVATIZATION:
A Poverty and Social Impact Analysis

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Acronyms And Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AAH</td>
<td>Action Against Hunger</td>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>CSFB</td>
<td>Credit Suisse First Boston</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>FOM</td>
<td>Farmer Ownership Model</td>
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<tr>
<td>FPSP</td>
<td>Farm Privatization Support Project</td>
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<tr>
<td>ha</td>
<td>Hectare</td>
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<tr>
<td>kg</td>
<td>Kilogram</td>
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<tr>
<td>IFC</td>
<td>International Financial Cooperation</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>IOM</td>
<td>International Organization for Migration</td>
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<tr>
<td>NGO</td>
<td>Non-Government Organization</td>
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<tr>
<td>OLS</td>
<td>Ordinary least squares</td>
</tr>
<tr>
<td>PA</td>
<td>Poverty Assessment</td>
</tr>
<tr>
<td>PPP</td>
<td>Purchasing Power Parity</td>
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<tr>
<td>PSIA</td>
<td>Poverty and Social Impact Analysis</td>
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<tr>
<td>RRS</td>
<td>Regions of Republican Subordination</td>
</tr>
<tr>
<td>SAS</td>
<td>SugdAgroServ</td>
</tr>
<tr>
<td>TAAS</td>
<td>Tajikistan Academy of Agricultural Sciences</td>
</tr>
<tr>
<td>TLSS</td>
<td>Tajikistan Living Standard Survey</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
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<td>WB</td>
<td>World Bank</td>
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EXECUTIVE SUMMARY

1. **The objective of this report is to analyze the welfare effect of cotton farmland privatization in Tajikistan which began in 1998.** The importance of understanding these changes is the predominance of the agriculture sector in the economy and the population’s welfare and its role in reducing the high level of poverty suffered by the people, especially rural households, in Tajikistan. Without ensuring that land privatization—especially in cotton growing areas—is carried out in such a way as to directly improve farmers’ welfare, the benefits of this privatization will translate into little real improvement in poverty.

2. **This report is a first step in understanding whether and when farm privatization leads to improvements in peoples’ welfare.** The main focus will be on income implications of cotton farmland privatization given that the privatization process for these lands has diverged the most from true land privatization as understood by giving farmers title over a specific piece of land and authority to grow what they choose and sell their output where they choose. The three main questions that this report addresses are as follows:

   - What has been the impact of different methods of cotton farmland privatization on poverty?
   - Who is currently benefiting from cotton production and marketing?
   - How can cotton production and marketing be improved to increase productivity and income?

3. **The discussion of the impact of privatization will focus primarily on income rather than more broadly on social consequences.** The reason for this approach is that privatization does not have a long enough track record in Tajikistan that would allow for distinguishing the specific social impact of privatization from the changes that are occurring throughout the country. However, it is also important to note that the social service delivery (education and health) deteriorated across the board in Tajikistan whether in farms that remained state-owned collective farms or in privatized and restructured farms. Consequently, the welfare of children in particular, but also workers most likely has worsened but this is due to general under-funding of social services whether by the state collective farms or the parent ministries due to the weak financial and fiscal situations respectively. Further research at the local level on access to key social services would shed further light on the extent of the deterioration of quality and access.

**CONTEXT**

4. **Developments in the cotton sector have critical implications for the economy in Tajikistan.** Despite the scarcity of arable land—which comprises about 3% of Tajikistan’s total land area, developments in the agriculture sector are significant in terms of their effect on the population’s living standards. An estimated 73% of the population lives in rural areas. Agriculture employs two-thirds of the labor force with the cotton sector being the largest...
employer of the rural labor force. Most of agriculture land is irrigated and much of this is devoted to rotational seed cotton production. Cotton fiber is Tajikistan’s second largest export (after aluminum) and contributes almost one-fifth of total export revenues.

5. **Poverty rates in the cotton growing oblasts remains high in Tajikistan.** Strong economic growth over the last five years has brought about significant poverty reduction at the national level. Total poverty has fallen from 81% to 64% of the population during 1999-2003 with rural poverty falling sharply from 84% to 65% in the same period. Nevertheless, poverty remains high in the cotton growing provinces of Sughd and Khatlon at 66% and 78% of their rural populations respectively. Moreover, the vast majority of the poor—72% of the all poor in Tajikistan, and 75% of the extreme poor—live in these two provinces.

6. **Cotton farmers saw a significant increase in real wages during 1999-2003, but this did not result from cotton.** Though during this period, nominal incomes in Khatlon did not rise, this province saw significant price deflation. This resulted in the improvement of real income of many cotton farmers which is the primary reason behind the decline in poverty. However, it does not appear that the higher value of their output benefited the farmers due to lack of pass through from cotton proceeds. During 1999-2003, not only did international prices for cotton rise significantly (by about 33%) and cotton production due to higher yields rose as well.

7. **Most cotton farms were privatized by giving collective land tenure rights to farmers which has resulted in no significant increase in individual farmers’ authority compared to Soviet times.** State farm restructuring has been the main restructuring method that the Government has used to “privatize” collective farms. This method confers collective land tenure upon the group of farmers working on the land, but with little additional real change in terms of decision making authority. Though farmers have the right to opt out of the collective farm, this could result in that farmer receiving land which is non-contiguous and possibly below average in quality; hence few—if any farmers—leave the collective. Farm management has mostly remained in the hands of the same person who was the manager prior to privatization. Though he is nominally elected by the farmers in the collective, the key to his authority is the support of local authorities.

8. **An alternative method of privatization has been adopted for some cotton farmland.** The Farm Privatization Support Project (funded by the World Bank) has privatized eight pilot cotton farms (representing less than 5% of total cotton farmlands). Privatization has entailed the transfer of individual land tenure to farmers along with seed capital grants. Under this privatization method farmers have direct control over crop choice and all financial appropriative decisions. Moreover, this project supported infrastructure rehabilitation, primarily of the water distribution network. Water user associations were formed which ensured the payment of water user charges.

9. **The main components of the chain of cotton fiber production are financing, ginning, and marketing.** Financing is provided by loan brokers to farm managers primarily in the form of inputs in kind. The farm manager agrees to deliver certain quantity of seed cotton in return for the financing. The ginning sub-sector is controlled principally by input financiers. This sub-sector acts as a de facto monopsony. The marketing of cotton is mainly carried out by input financiers, as they have the first charge on cotton produced by farms.
MAiN FiNDINGS

10. Despite the reforms undertaken, distortions in the cotton sector resulted in a loss estimated in the range of $63 million - $105 million annually. The main sources of distortions which affect the cotton sector are ginning and input financing. Efficiency costs due to the ginning sub-sector range between 3.5% and 5.4% of GDP; this comprises four-fifths of the total loss. In addition, in-kind input finance by loan brokers results in leakages of resources estimated as being between 0.5% and 1.4% of GDP. Total loss from these two sources range from 4% to 7% of GDP.

11. The combination of distortions and insufficient cotton farmland privatization results in an estimated loss of $100 million in yields foregone. The opportunity cost of the above noted discussions are only on incremental yields. In the present environment, yields are 1.9 tons of seed cotton per hectare. It has been estimated that in a distortion-free system seed cotton yields could be 2.8 tons per hectare, an additional earning of about US$ 100 million a year which is equivalent to an additional 6.4% of GDP.

Table 1: Income foregone due to distortions and low yields in the cotton sector

<table>
<thead>
<tr>
<th>Source</th>
<th>Annual Financial Losses</th>
<th>Total Cotton Income Foregone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower Limit (in % of GDP)</td>
<td>Upper Limit (in US$ ml)</td>
</tr>
<tr>
<td></td>
<td>Lower Limit (in % of GDP)</td>
<td>Upper Limit (in US$ ml)</td>
</tr>
<tr>
<td>Total Loss</td>
<td>4.0</td>
<td>6.7</td>
</tr>
<tr>
<td>Gins</td>
<td>3.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Loan Brokers</td>
<td>0.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Foregone Cotton Production</td>
<td>4.7</td>
<td>6.4</td>
</tr>
<tr>
<td>Total Cotton Income Foregone</td>
<td>8.7</td>
<td>13.1</td>
</tr>
</tbody>
</table>

Source: World Bank staff calculations.

12. Middlemen—loan brokers, gin owners, farm managers, and local governments—are absorbing income that should be accruing to farmers. The inability of farmers to make decisions regarding whom to go to for financing, ginning, and marketing of their produce has resulted in their being exploited by intermediaries. By over-invoicing and under delivering farm inputs, loan brokers extract resources from the cotton sector. This results in low yields and hence lower incomes for all stakeholders in the cotton sector. Because the gins give low outturns, which is the result of a combination of poor machinery and theft, the farmer loses on cotton proceeds. Furthermore, gins take an average of 110 additional days to gin cotton, and the farm has to pay interest on input finance and needs to borrow further crop finance for the next season. In addition, because of delays in ginning, the quality of the cotton also deteriorates. This means that although farmers are being held accountable for cotton output, they have no voice in input procurement issues. Losses are absorbed by the proceeds that should accrue to the farmer. The result is that the farmer is generally in wage arrears and the farmlands accumulate debts.
POLICY RECOMMENDATIONS

13. The current situation can be improved by adopting either of two options: (Option 1) privatization without liberalization, and (Option 2) privatization with liberalization. Both options propose privatization that provides for individual land tenure to farmers but differ on liberalization of the cotton production and marketing chains. With Option 1 the Government would privatize all farmlands whilst no change being made in the production and marketing chains. Option 1 will be primarily be opposed by farm managers who would lose their control over farmlands but not by the vested interests (for example in gins and loan brokers) because it would not weaken their control over production or marketing. In terms of productivity increases this option will meet with limited success because the inefficiencies in the ginning and marketing chains will remain.

14. Option 2 will lead to privatization and comprehensive liberalization of the production and marketing chains. This option will be opposed by the vested interest, both explicitly and tacitly because it would weaken their control over the cotton sector, hence rented. The option will lead to high productivity and incomes for the farmers in particular and the country in general because the incentives to enhance productivity will be optimal and losses due to inefficiencies will be minimized. It is for this reason that Option 2 is preferable.

15. Some key liberalization proposals of Option 2 for improving this situation are listed below:

   ① Privatization that results in the provision of individual land use tenure to farmers needs to be promoted. Individual land tenure provides farmers with more control over cropping and financial appropriation decisions.

   ② The practice of in-kind input financing needs to be phased out. Inputs are available in the local market and it should be left up to the users (farms) to choose quantities and procurement sources. This would foster greater competition and engender more transparency. Experience from IFC SAS has demonstrated that farms that have choices on input finance procurement have raised their yields.

   ③ The usefulness for national targeting of cotton production has ended. Because the cotton sector has been restructured and liberalized, the targeting of cotton production serves only to distort market forces. Owing to their historical context, national targets, however indicative, are perceived to be directions that must be followed, and such targeting provides incentives for local governments to interfere unnecessarily in the cotton sector.

   ④ The tax code which links cotton tax collection to the ginning source should be reviewed with a view to severing the link. The current arrangement provides gins with captive cotton sources, eliminating competition between gins. Changing this code would provide farmers with increased choices and would induce greater competition. An alternative could be to setup cotton auction yards in district centers where buyers could come together and bid for the cotton. Taxes could be collected at the point of sale from these yards.

   ⑤ Competitive input finance mechanisms need to be developed. An entity such as SAS can help break the monopolistic control of input financiers and can help to lower the cost of capital for farms, because of greater competition. Microfinance regulations and assistance
in setting up sustainable microfinance providers would increase access to credit, and thus could reduce a bottleneck in the current system.

To increase the number of buyers, there is a real need to liberalize export licensing procedures and to align the cotton grading system to world standards. Buyers need to know the standard of the cotton that they buy. Since Tajikistan produces about 1% of the world’s cotton supply, it would be better if the country’s cotton standards were to conform, or if the standards were clearly mapped to world standards. These issues can be considered within the ambit of an integrated cotton development strategy, such as that successfully implemented in Zimbabwe and Pakistan.

16. **Transparency and accountability need to be increased through involving civil society organizations in developing support for change.** In addition to undertaking reforms within the marketing and production chains, it is crucial to develop support for reform and change from stakeholders outside of the entrenched system. In this area, active dissemination campaigns need to be carried out in collaboration with civil society organizations such as Action Against Hunger to inform farmers of the costs of distortions. This would help generate a sustained demand for change from the majority of farmers and from agents that do not benefit from the status quo.
CHAPTER I
BACKGROUND AND COUNTRY CONTEXT

I.1 Cotton in Tajikistan – A Brief Background

1.1. The agriculture sector plays a critical role in Tajikistan’s economy though 93% of the land is mountainous. Most of the 7% arable land is concentrated in the Khatlon and Sughd provinces, with limited arable land in the Rayon (province) under Republican Subordination (RRS). Fifty-six percent of irrigated lands are under rotational cotton cultivation. Cotton is the most important agricultural crop in Tajikistan in terms of employment and export earnings. The cotton sector employs more than half of the labor force and generates about 18% of total export earnings.

1.2. Economic growth has resulted in poverty reduction but there is concern about the concentration of poverty in rural areas, which are mostly cotton growing. Over the last five years the GDP growth rate has averaged about 8%, while poverty rates, measured at US$2.15 per day (at purchasing power parity), have fallen – from 81% in 1999 to 64% in 2003. However, Tajikistan remains the poorest country in the ECA region with a per capita GDP of US$191, with the concentration of poverty in rural areas, where 73% of the population resides. About 65% of the total population lives in Khatlon and Sughd, the two main cotton growing provinces. These two provinces account for 72% of the poor and 75% of the extremely poor, as shown in Table I.1. This is an interesting finding: since cotton accounts for about 11% of GDP and is the major cash crop, cotton producing areas would not be expected to be the poorest regions of the country.

1.3. Significant liberalization and partial privatization have taken place in the cotton sector since independence but there are problems with the pass-through of proceeds to the farmer. The ginning sub-sector has been privatized, input prices have been liberalized, the financing and marketing of cotton have also been privatized, and most of the cotton farmlands have been restructured, while a minority of them have been privatized. Restructuring has mostly entailed the transformation of large state and collective farms into smaller farms managed and effectively controlled by ‘elected’ farm managers. Farm members of restructured farms have been provided with collective land tenure rights in the form of land use certificates with a list of farm members. The World Bank has implemented a Farm Privatization Support Project (FPSP) whereby 10

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1 Rotational crop production is necessary to restore the nitrogen balance of the land which is depleted by cotton production. In practice, crop rotation is not practiced, which leads to a fall in the productivity of the land.

2 The cotton production chain in pre-independence (Soviet) times is presented in Annex I.
collective farms (of which 8 are cotton) have been transformed into small family farms, where the Government has issued land use certificates to individual farmers.\(^3\)

**Table I.1: Regional Distribution of the Population, the Poor, and the Extremely Poor, 2003\(^4\)**

<table>
<thead>
<tr>
<th>Province</th>
<th>Population</th>
<th>Distribution of the Poor</th>
<th>% of Population Living in Poverty</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>All Poor</td>
<td>Extreme Poor</td>
</tr>
<tr>
<td>Khatlon</td>
<td>33</td>
<td>40</td>
<td>51</td>
</tr>
<tr>
<td>Sugd</td>
<td>32</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>RSS</td>
<td>23</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>Dushanbe</td>
<td>9</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>GBAO</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>


1.4. Seed cotton production has fallen from its 1990s level, although there has been some improvement since 1999. The area under cultivation has remained fairly constant, while seed cotton yields have fallen by 32% during 1990-2003 from about 2.8 to about 1.9 tons per hectare, as shown in Figure I.1. The major reasons for fall in productivity have been: (i) lack of an efficient crop financing mechanism, (ii) inefficiencies in the ginning sub-sector, (iii) problems with the marketing of cotton, and (iv) lack of effective privatization of the factors of production.

**Figure I.1: Seed Cotton Yields and Area Cultivated**


1.5. Twin objectives of vital importance are to improve productivity in the cotton sector and pursue equitable privatization. These are two key objectives stated in the Tajikistan Poverty Reduction Strategy Paper. The issue confronting policymakers is how to improve cotton sector productivity and privatize cotton farmlands within an equitable framework.

**I.2 Objective and Implementation of the Study**

1.6. The principal objective of this report is to analyze the poverty impact of privatization of cotton farmlands. We will seek to address three key questions, namely: (i) what has been the impact of cotton farmland privatization on poverty? (ii) Who is currently benefitting from cotton production and marketing? and (iii) How can cotton production and marketing be improved to increase productivity and income? The study will endeavor to answer these questions by:

\(^3\) Other donors are involved in supporting the Government in the rural sector, but not in the process of cotton farmland privatization.

\(^4\) Adjusted for regional prices.
(i) Analyzing the poverty impact of cotton farmland privatization by different methods currently being deployed in Tajikistan. These methods are: (i) State Farm Restructuring (SFR), and (ii) the World Bank Farm Privatization Support Project (FPSP). The IFC has implemented the Farmers’ Ownership Model (FOM) which provides financing to restructured and privatized farms. The main focus will be on access to land, crop choice and the participation of farmers in the financial affairs of farms.

(ii) Assessing the incentive structures in the cotton sector. Chapter III will analyze the current cotton production and marketing chains and the distortions that exist within them. Where possible, these distortions will be quantified. In addition, a stakeholder analysis will be carried out to assess the incentives and relative importance of each stakeholder in the privatization process. Within this context a gin zoning map will also be prepared for each cotton producing rayon. This map will depict the location of gins in the cotton production areas along with the main loan brokers operating in that area.

(iii) Conducting a poverty and social impact analysis of inefficiencies and distortions. Building on the discussion in Chapters II and III, we will assess the welfare impact of the inefficiencies in the cotton production and marketing chains. The analysis will focus on the economy as a whole as well as on the welfare (as measured by income) of farmers.

(iv) Providing policy advice with a rationale for addressing the major issues. Various policy options will be provided with the aim of improving the welfare of the farmers and reducing poverty in Tajikistan.

1.7. Before the discussion proceeds, it is important to state why the focus of this study is only on cotton farmlands. First, cotton farmlands make up three-fourths of total farmlands. Second, non-cotton farmland privatization is taking place in a framework that provides farmers with full appropriative rights on lands. The Land Code is silent on the issue of renting and leasing of land and this practice is taking place informally. However, local governments are at liberty to interpret the Land Code in determining whether or not land can be rented or not. There are no bottlenecks or impediments to the privatization of these lands. For most non-cotton farms the Government has given or is in the process of giving inheritable but not tradable land use certificates to individual farmers. In addition, non-cotton farms grow non-cash crops and therefore have not attracted the rent seeking vested interests that have affected the cotton sector.

1.3 Methodology of the Analysis

1.8. The methodology adopted in this report includes:

① A partial equilibrium analysis on the impact of different farmland privatization methods on the incomes and welfare of farmers

② A stakeholder analysis of the cotton sector in order to determine the incentive structures of various players and their control over the privatization process

③ Quantification of the costs of distortions and inefficiencies within the cotton production and marketing chains.

1.9. In deciding on the methodological approach for the PSIA, consideration was given to the following points:
Importance of indirect impacts. The net effect of the privatization process will be transmitted mainly through two channels. The first will be the impact of privatization on farmers’ incomes and welfare. The second will be the overall impact on the economy and the Government fiscal position from the change in cotton yields. In addition, the privatization process will alter the incentive structures of major stakeholders who control, either notionally or effectively, the different factors of production in the cotton sector.

Availability of data. The primary source of data for quantitative analysis will be the Tajikistan Living Standard Survey 2003. The problem here is that from the dataset it is not possible to distinguish clearly between cotton and non-cotton farmers. There were only 79 households within the dataset that grew cotton, out of 1,572 rural agriculture households. These observations are insufficient for conducting robust quantitative analysis. However, a significant amount of statistical time series data is available on seed cotton production and marketing by provinces. These data are supplemented by rich qualitative information that is available on the marketing and distribution chains.

Time and resource availability – Privatization of cotton growing farmlands is currently on-going and there is no track record to make a comprehensive comparison of the differences in outcomes with restructured farms. Furthermore, an agricultural survey does not exist.

Local capacity – There are significant numbers of donors, civil society organizations and international organizations involved in the cotton sector reform program in Tajikistan. They have provided information for this study.
CHAPTER II
POVERTY AND SOCIAL IMPACT OF ALTERNATIVE FARM PRIVATIZATION METHODS

2.1. The primary focus of this chapter will be on analyzing the poverty and social impact of alternative farm privatization methods. In conducting this analysis this chapter will consider the following: (i) the rationale for privatization and the expected feedback to the economy; (ii) descriptions of alternative privatization methods; and (iii) the impact on the wealth, income, and consumption of farmers from alternate farm privatization methods with the aim of isolating the welfare maximizing privatization method.

II.1 Why Privatize Farmlands?

2.2. The primary thrust of the privatization of state and collective farms is to improve the productivity and increase the incomes of farmers. Higher productivity (yields) will create a virtuous cycle of sustainable growth and poverty reduction, as stylized in Figure II.2.

Figure II.1: Area Under Cultivation, by Province '97-'03

2.3. Figure II.1 shows that most seed cotton cultivation takes place in Khatlon and Sughd – the provinces where 78% of the extremely poor people live. Seed cotton yields have been increasing since 2000 but remain significantly lower than their 1990 levels. In 2003 seed cotton yields were 1.9 tons per hectare, 32% lower than the yield in 1990 of 2.8 tons per hectare.

2.4. Lower yields represent direct losses to the country and to farmers in particular, in terms of incomes forgone. Table 1 presents the potential export earnings at different yield levels based on the actual land cultivation area in 2003 and the average price per ton of cotton fiber. It can be seen that export earnings from cotton production can be increased significantly with higher yields.
Figure II.2: Privatization, Yields and a Virtuous Growth–Poverty Reduction Cycle

Equitable and effective privatization will create the right incentives to cultivate and market cotton by farmers. Competition, liberalization and input finance mechanisms must be fair and transparent. Supernormal profits by middle-men are a sign of inefficiency and should not be sustained.

Higher yields and incomes for farmers

- Improvement in the business climate, skill set of farmers, investment machinery and infrastructure, diversification of production
- Higher income leads to expenditure on consumption goods, human capital accumulation, investment in machinery. Feedback to tax collections via aggregate demand
- Higher cotton tax collections (with unchanged tax rates) and foreign exchange earnings from cotton exports. Higher tax earnings from increase in aggregate demand

- Increase in employment, higher technical human capital will lead to increase in productivity and generate positive externalities. Capacity of community to participate in development processes will increase in line with the PRS and enhance community participation in development
- New investment opportunities are created. Investment in further degrees of processing and establishment of other industries. Higher incomes mean that economic cost of recovery of electricity, water and other user charges is possible, allowing for subsidies to be curtailed and making these profitable
- Higher taxes allow government to maintain and upgrade health and educational facilities previously run by state and collective farms. Increase in incomes of farmers allows them to pay fees. Government can maintain, upgrade and expand physical infrastructure simultaneously

Figure 3 is only a stylized picture of a virtuous cycle that could be started if privatization is carried out effectively and results in higher yields and incomes for farmers. This PSIA will look at privatization in an equitable and effective framework (the first box in Figure 3). The discussion will only elude to other linkages in the economy but will not explore them in detail.
II.2 Alternative Farm Privatization Methods – Some Modalities

2.5. The process of the privatization of cotton farmlands began in 1996. At the time there were 668 state and collective farms (sovkhозes and kolkhozes) and 168 seed and animal pedigree research farms. These farmlands were primarily located in the irrigated zone of Khatlon and Sughd and in RSS. Post-independence Tajikistan opted to transform its economy from a controlled economy to a market-based economy. Among other important areas of structural adjustments, farmland privatization became a key policy element of the move towards the market economy.

2.6. From 1997 onwards the Government implemented wide-ranging reforms in the cotton sector, including the deregulation of agricultural pricing, procurement, and trade policies. According to the Government, almost 73% of all state and collective farms have to date been privatized. The majority of the remaining 27% of farmlands are cotton growing and these remain as state owned collective farms. Privatization of cotton farmlands to date has been conducted using two methods: state farm restructuring and the farm privatization support method. These methods are described below. However, at the outset it is important to note that in Tajikistan land is owned by the Government but its use right is vested in the Tajik citizen, family, individual, or group of individuals. The land use right is inheritable but cannot be rented, leased, transferred to non-family members, mortgaged, or sold. The land use right is registered and is backed by the Government.

2.7. State Farm Restructuring (SFR): The process of state farm restructuring works along the following lines. The collective farm is broken down into its constituent brigades and each brigade is transferred to an elected farm manager. The process of electing the farm manager is carried out at a farm meeting convened by the local government and the state land committee. At the meeting, farm members are informed of the decision of the Government to transform the collective farm into dekhan In Tajik, the word dekhan literally means peasant or worker farms. The local government propose a farm manager for each dekhan farm and ask for confirmation by the members by a show of hands. It is not clear what criteria are used to propose the farm manager, and the rules do not clarify this, but generally the farm manager is the person who was previously the head of the respective brigade under the collective farm. The general meeting endorses the nominee for the post of farm manager. Once this endorsement is obtained, the nominee is officially made the farm manager, often for life, unless the farmers pass a motion of no-confidence at the annual general meeting with a simple majority.

2.8. The newly established dekhan farm managers get together to form a dekhan farm association and elect a chairperson to head this association. Generally the former chairperson of the collective farm assumes this position. Any livestock on the farm is given to the dekhan farm under whose jurisdiction it is located. In addition, the local governments take into their direct control the uncultivated land area of farms as a “reserve fund” for providing lands to future generations. Once the collective farm is restructured in this manner, the state land committee

Table II.1: Comparative Earnings with Different Yields

<table>
<thead>
<tr>
<th></th>
<th>Current Yields (1.89 tons/hectare)</th>
<th>Projected Yields (2.2 tons/hectare)</th>
<th>Projected Yields (2.5 tons/hectare)</th>
<th>Projected Yields (2.8 tons/hectare)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area under cultivation in 2003 (hectares)</td>
<td>284,367</td>
<td>284,367</td>
<td>284,367</td>
<td>284,367</td>
</tr>
<tr>
<td>Raw cotton production (actual tons)</td>
<td>537,358</td>
<td>625,807</td>
<td>710,918</td>
<td>796,228</td>
</tr>
<tr>
<td>Raw cotton to cotton fibre conversion rate of 32%</td>
<td>171,955</td>
<td>200,194</td>
<td>227,494</td>
<td>254,793</td>
</tr>
<tr>
<td>Actual price (USD/tons)</td>
<td>1,200</td>
<td>1,200</td>
<td>1,200</td>
<td>1,200</td>
</tr>
<tr>
<td>Earnings from Cotton (USD million)</td>
<td>206</td>
<td>240</td>
<td>273</td>
<td>306</td>
</tr>
</tbody>
</table>

Source: State Statistics Office and staff estimates.
issues a land use certificate to each *dekan* farm in the name of the farm manager with a list of the names of members. The farm manager takes over all of the running decisions formerly vested with the collective farm chairperson, including the procurement of all crop inputs, marketing and financial management. Farms restructured in this way are typically large—the farm restructuring attended by the task team resulted in the creation of seven *dekan* farms, each of approximately 110 hectares. Nearly all collective farms restructured to date have been transformed in this way. Effectively, restructuring does not change the incentive structures within farms. However, one thing does change which is the responsibility of the delivery of social services. An additional feature of this restructuring process is that the social services supported by the original state farm (e.g., kindergartens, schools, and hospitals) are now transferred to their parent ministries.

### 2.9. Farm Privatization Support Project (FPSP):

In 1998 the Government of Tajikistan with the support of the World Bank began the implementation of the Farm Privatization Support Project. Under this pilot project ten farms covering an area of 17,000 hectares were privatized. Of these ten farms, eight were cotton farms. As was the case with state farm restructuring, the social services provided by these farms to members were transferred to their parent ministries. Then the FPSP deployed a four-step approach to privatization. In the first step, farms were divided into their constituent brigades and per capita land was divided among farmers by lottery. Inheritable but not tradable land use certificates were provided by the state land committee to *individual farmers* reflecting the allocation of lands. The second prong was the formation of water user associations and the rehabilitation of intra-farm water distribution infrastructure. This would ensure a community-managed water provision system, a water charge collection mechanism, and maintenance of the intra-farm water distribution system. The third prong was the provision of a grant of US$300 per hectare to farmers for the procurement of crop inputs or any farm needs to start farming as an independent family farmer. The fourth prong was the provision of technical assistance to farmers in growing cotton independently. This was done by having demonstration plots where local consultants, along with scientists from the local research institutions of the Tajikistan Academy of Agricultural Sciences (TAAS), showed farmers how to grow cotton independently. The reason for the fourth prong was that during Soviet times farming was very specialized, with each farmer concentrating on a specific task. Training was considered important because after privatization the farmers would need to undertake all the tasks themselves. This approach resulted in the formation of small family farms with varying sizes of 2 to 20 hectares (an average area of about 15 hectares).

### 2.10. Cotton financing and marketing under the IFC Farmer Ownership Model (FOM):

The IFC has implemented the FOM for providing crop financing to restructured or privatized farms. Under this pilot project, a joint stock company, SugdAgroServe (SAS) was established. This company is owned by about 350 farmers. Membership in SAS is open to restructured farms and to those privatized under the FPSP. SAS does not deal with collective farms. Proof of restructuring or privatization in terms of the production of a land use certificate is required by IFC. SAS provides financing to members for crop inputs at commercial terms and uses future cotton crops as collateral. Financing can be repaid to SAS in cash or as raw cotton. In addition to providing crop financing, SAS provides technical assistance to farmers through imparting knowledge on effective crop growing practices, and also assists farmers in marketing their cotton and in marketing it on better terms. SAS does not interfere with intra-farm financial management issues, leaving that task to farm managers or to private farmers.
II.3 Impact Analysis of Individual and Collective Land Tenure

2.11. Brief modalities of the restructuring/privatization processes practiced in Tajikistan have been provided. The study now provides a comparison of incentive structures, ownership of land, financial management, and income generation and sharing for farmers under each privatization method.

2.12. However, before conducting a comparative analysis it is important to point out the pivotal difference between each method—land tenure and usage right. In the case of the FPSP, land tenure rights are vested with the farmer, while in case of SFR land use rights are collective, with the farm manager making decisions on behalf of the members. The FOM is silent on this issue and supports either form. This pivotal difference results in remarkably different intra-farm incentive structures, as can be seen in the comparison set out in Table II.2. The comparison is essentially of the differential impacts of individual land tenure and collective land tenure on the incentives for and incomes of farmers.

Table II.2: Comparison of the Impacts of Individual and Collective Land Tenure

<table>
<thead>
<tr>
<th></th>
<th>FPSP – Individual Land Tenure</th>
<th>SFR – Collective Land Tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to land</td>
<td>Individual inheritable and non-tradable rights. Can only be revoked by “irrational” use of land. Law does not define rational use.</td>
<td>Managed by farm managers. No clear demarcation of physical location of land for each farmer. Law not clear on procedures on separation from collective. In addition farm manager has the latitude to exclude and include members.</td>
</tr>
<tr>
<td>Impact on wealth</td>
<td>Positive impact on assets and hence wealth, as farmer has clearly demarcated land which increases potential income as well as generating a positive net present value.</td>
<td>Farmer does not have clear title to demarcated land, hence any calculation of income or net worth not possible because farmer does not have any say in the financial dealing of the farm nor a stream of income.</td>
</tr>
<tr>
<td>Empowerment</td>
<td>Within boundaries of “rationality” the farmer can choose the crop—allbeit tacit pressure from local governments remains on the farmer to grow cotton</td>
<td>Farm manager makes all decisions on behalf of the farm and pays a wage to workers. Wage reflects employment rather than ownership.</td>
</tr>
<tr>
<td>Income generation</td>
<td>The farmer decides on input procurement and financial dealings of farmland. The farmer has full appropriative rights on the proceeds from cotton.</td>
<td>Farmer has no control over land input-output of the farm. It is the farm manager who decides on how profits will be shared within the farm. The law on dekhan farms is silent on management issues.</td>
</tr>
<tr>
<td>Rotation of farm control</td>
<td>Since the farmland is individually owned the issue of rotation of control does not arise.</td>
<td>Farm managers are nominated by local governments and confirmed by a show of hands at the general body meeting called at the time of restructuring. Farm managers are elected for life unless farm members pass a motion of no-confidence with an absolute majority at the annual general meeting. The law does not fix any term or re-election.</td>
</tr>
</tbody>
</table>
2.13. The comparison between individual and collective land tenure indicates that for the farmer the impact on access to land, wealth, income generation, empowerment and risk mitigation would be more favorable under individual land tenure. It is also important to note that the social service delivery (education and health) deteriorated across the board in Tajikistan whether in farms that remained state-owned collective farms or in privatized and restructured farms. Consequently, the welfare of children in particular, but also workers most likely has worsened but this is due to general under-funding of social services whether by the state collective farms or the parent ministries due to the weak financial and fiscal situations respectively. Further research at the local level on access to key social services would shed further light on the extent of the deterioration of quality and access.
CHAPTER III
COTTON PRODUCTION AND MARKETING CHAINS:
SOME ISSUES

3.1. This chapter will describe the current organization of the cotton production and marketing chains. The focus will be on distortions along with their quantification and ramifications on cotton production. In addition, a stakeholder analysis will be carried out of the cotton sector in order to determine incentives of stakeholders in this sector and to determine which stakeholder will support or oppose privatization.

III.1 Cotton Production and Marketing, Post-1996

3.2. Post independence, the cotton sector production and marketing chain underwent major changes. (Annex II presents a flowchart depicting the organization of cotton production and marketing post-1996). The major changes have been in financing, in the privatization of gins, and in the liberalization of crop cultivation. These changes are discussed below.

3.3. Financing Chain and “Future” Contracts: Prior to independence, crop financing was provided by the Soviet Union. Post-1996, the Government of Tajikistan did not have the resources to provide financing for cotton cultivation and needed to search for alternative sources. The Government entered into discussion with Paul Reinhart SA, an international cotton trading firm, in this regard. This company proposed an arrangement whereby it would on-lend to the Government of Tajikistan US$138 million from Credit Suisse First Boston (CSFB), provided the Government would give a sovereign guarantee to CSFB that it would repay the loan in US dollars. This guarantee was given and financing was provided to the Government via the National Bank of Tajikistan, at an interest rate of 10%. Over time, other foreign financiers entered the arena and some provide financing directly to local loan brokers, including Paul Reinhart SA. Recently, foreign financiers are starting to provide crop financing directly to local loan brokers. These loan brokers are, in practice, merely local agents for foreign financiers.

3.4. The Government further determined that AgroInvest (the former AgroPromBank) would handle cotton financing issues. AgroInvest remained a public financial institution. Based on this decision, the National Bank of Tajikistan transferred the finances to AgroInvest at a mark-up of 12%. AgroInvest resolved to engage a group of loan brokers that would deal with farms. Each loan broker worked with the tacit support of local governments and cornered certain cotton growing areas where farms could liaise only with that broker. The lending rate charged by loan brokers ranged between 19% and 25% in US dollars. However, AgroInvest did not provide guidelines to brokers on interest rates they could charge on loans. Annex VI depicts different cotton growing areas along with the names of input finance companies that provide financing to farms in those areas.
3.5. These loan brokers and restructured farms would enter into future contracts, which would be witnessed by the government at the rayon level. These future contracts stipulate that in return for crop financing, farms would deliver a fixed amount of cotton to predetermined gins. Crop financing was provided in-kind. Once the raw cotton was ginned and readied for export, the account of the farm would be credited with the price of lint cotton prevailing at the Liverpool Cotton Exchange, less transport costs. In case a farm was not able to deliver the agreed amount of raw cotton to the gins, then the amount of shortfall would be treated as debt and interest would accrue on it. If the farm delivered more cotton than was stipulated under the contract, then the broker would credit the account of the farm accordingly.

3.6. **Privatization of Cotton Gins:** As part of the cotton sector reform the Government privatized all 23 state owned gins in 2000. Privatization resulted in loan brokers’ gaining control of 5 gins directly and having majority shareholding in another 15. More gins have since been established, bringing the total number of gins currently operating in Tajikistan to 38. Aside from the privatization drive, the Government has not made changes to the tax code that links the local governments’ revenue collection mechanism to cotton processed in gins under their jurisdiction, rather than to cotton grown on farms under their jurisdiction. This aspect of the taxation code effectively zones cotton production to local gins (Annex VI also shows the location of cotton gins within cotton producing areas).

3.7. **Liberalization in Crop Cultivation and State Interference:** Between 1996 and 2003, the Government issued various decrees which provide the legal basis for the agriculture sector reform and the ensuing privatization and farm restructuring carried out to date (a list is contained in Annex V). One of these decrees also eliminated local government interference in the agriculture sector, although the Government maintains its policy of formulating national cotton targets, as was done by the Soviet Union in pre-independence times.

### III.2 Incentive Structures and the Impact on the Cotton Sector – Key Issues

3.8. The cotton sector is clearly in transition, with certain aspects controlled by a small group of private entrepreneurs, working like a cartel, along with government targeting of cotton production, with informal means of ensuring that targets are pursued. Such a hybrid system has the potential to create lopsided incentive structures, as private stakeholders use their control over financial resources and ginning assets in order to maximize profits, and the Government uses its formal and informal control mechanisms over farmlands and the general administrative network in order to maximize tax revenues and cotton production. The PSIA now looks at how the results of these incentives have affected the cotton sector in Tajikistan.

3.9. **Future Contracts and Accumulation of Debts:** Since private crop financing began in the form of future contracts, cotton farmlands have accumulated significant debts. According to a recent study by the ADB, total external cotton farm debts stood at US$65 million on January 1, 2004. The principal and interest break-up of these debts has not yet been established because of a poor data recording system. The process of future contracts and subsequent accumulation of debts is depicted in Annex III and is as follows.

3.10. The issue of debt accumulation has its genesis in future contracts. The modalities of future contracts have been briefly presented in Section II.1. On paper, future contracts have made theoretical sense but in practice they have experienced the following problems:

   (i) **Over-invoicing of inputs by loan brokers:** Cotton inputs were provided by the loan broker in-kind rather than seed capital in cash. The broker acted as an input procurer
and supplier. These inputs were generally over-priced (see Annex IV for estimates of prices of inputs in the open market and the price ranges at which loan brokers supplied inputs). Conservative estimates suggest that inputs were over-invoiced between 10 and 25%. Table III.3 shows the range of over-invoicing in this sector for one year. The low scenario shows the amount of resource leakage if inputs were over-invoiced by 10% and the low scenario shows the same for over-invoicing of 25%.

Table III.1: Total Resource Leakage Due to Over Invoicing of Cotton Inputs

<table>
<thead>
<tr>
<th></th>
<th>low</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs per hectare (USD)</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Over invoicing (percent)</td>
<td>10%</td>
<td>25%</td>
</tr>
<tr>
<td>Amount extracted from input over invoicing</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>Number of hectares cultivated in 2003</td>
<td>284,367</td>
<td>284,367</td>
</tr>
<tr>
<td>Total amount extracted from cotton sector (USD)</td>
<td>8,531,010</td>
<td>21,327,525</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture and staff estimates.

Resource leakage from the cotton sector ranges from US$8.5 million to US$21 million per year, depending on the %age of over-invoicing. Considering this simple calculation, the question arises as to why the farm manager accepted over-priced inputs. The answer lies in two key areas:

a. Lack of alternate crop financing mechanisms and pressure from the Government to grow cotton meant that farms concluded future contracts with loan brokers, irrespective of the terms of the contract.

b. The farm manager was elected with the support of local authorities but was not answerable to farmers in any real sense on farm management issues. By the law, the farm manager can borrow in the name of the farm but is not personally liable for repayment. This resulted in imprudent borrowing. In addition, the incentive of sharing “rents” from over-invoicing with brokers was strong.

(ii) **Delay in input delivery by loan brokers**: Cotton inputs were often supplied with a significant delay, which meant that farms could not start cotton cultivation on time. By not starting cotton cultivation on time, the farm was not able to capitalize on the weather windows. Lack of proper timing means that the cropping remains out of sync with the weather throughout the cultivation period. Again, the farm had to accept this sub-optimal financing arrangement because this was the only source of financing available to it.

(iii) **Poor quality and inadequate quantity of inputs**: Problems of input over-invoicing were compounded by inputs of poor quality which were supplied in inadequate quantities. The quantity was not checked by the farm manager properly, and the lack of financial disclosure requirements for farms meant that farmers did not know what the contracted quantity was and thus could not compare it with the delivered quantity.

3.11. These distortions notwithstanding, the seed cotton quantity that farms contracted to deliver in these future contracts was very optimistic. These optimistic targets were dictated by local authorities who were concerned with achieving their regional share of cotton production targets. Owing to the problems highlighted above, and to weather-related issues, crops failed in 1999 and 2001. In addition, during 2002 the world prices of cotton fell by 50%. Farms could not deliver the contracted amount of cotton to loan brokers. This put farms in arrears on their debt.
service commitments. Over successive years farms could not meet their yearly contracted cotton production targets (which were optimistic to begin with) while previous arrears kept accruing interest. This was how debts were accumulated by farms. The impact of farm debt is that indebted farms became “captive” to the brokers and had to surrender their cotton to specific brokers with no possibility of marketing their cotton independently and then settling their debts. The Government views these debts as private obligations because it recognizes restructured farms as private entities.

3.12. Increasing farm debts translated into non-performing loans for AgroInvest Bank, and into higher external indebtedness of the country to international loan financiers. AgroInvest carried out a debt-equity swap with foreign financiers: in exchange for cotton debts, foreign financiers were given minority shareholding in AgroInvest. This move further consolidated the control of foreign financiers over the cotton sector. However, the problem of non-performing domestic loans remained an issue. On December 31, 2003, the Government split AgroInvest into two financial entities – KreditInvest and AgroInvest. All non-performing loans were transferred to KreditInvest while AgroInvest recapitalized. The policy of how to deal with the past stock of debts, and how to ensure that further debts do not accumulate, is currently being discussed.

3.13. **Effective Cost of Ginning in Tajikistan:** The average nominal cost of ginning one ton of cotton in Tajikistan is about US$140 per ton. However, the effective cost of ginning is significantly higher because of: (i) higher accrued interest costs for the farm owing to ginning delays, (ii) lower ginned cotton outturns, (iii) deterioration in cotton quality because of gin delays (these issues along with the quantification of losses are presented below).

3.14. Gins have a perverse incentive to delay cotton ginning. This perverse incentive emanates from the fact that gins are owned by loan brokers who charge farmers interest on input finance until the cotton has been ginned and is ready to be exported. The longer the time taken to gin cotton is, the longer is the time duration over which interest is charged by the loan broker. Tajik gins take on the average 200 days to gin cotton as compared with 110 - 120 days for Western gins. This delay results in the following:

(i) **Higher accrued interest for the farm.** Typically, loan brokers provide inputs at interest rates in the range of 14 – 30%. Table III.2 calculates the interest cost to the cotton sector of the additional days required for ginning in Tajikistan. The low scenario is based on an interest rate of 14% while the high scenario is based on an interest rate of 30%.

| Table III.2: Additional Interest Cost Borne by Cotton Sector Due to Delays in Ginning |
|-----------------------------------------|---------------------|---------------------|
| Input finance per hectare (USD)         | low  | high  |
| Interest rate                           | 300  | 300   |
| Interest cost for 110 - 120 days (average 115 days) | 13.2 | 28.4 |
| Interest cost for 200 days              | 23.0 | 49.3  |
| Excess interest cost due to delays (200 days vs. 115 days) | 9.8  | 21.0  |
| Number of hectares cultivated in 2003   | 284,367 | 284,367 |
| Total excess interest cost borne by the cotton sector (USD) | 2,781,343 | 5,960,021 |

Source: Staff estimates.

(ii) **Reduction in working capital of farms.** In the regular cotton cultivation cycle farmers plant cotton in April each year and pick the cotton by mid-November. The cotton is then sent for ginning. In other countries, gins process the cotton in 3...
months. This would mean that by mid-February farms would be able to dispose of their ginned cotton and buy inputs in time for the next cultivation season. In Tajikistan ginning takes about 6.5 months. This means that by the time farmers want to plant the next crop they still have their working capital tied up in last year's crop and they need to borrow money from loan brokers again. This fact unnecessarily increases the stock of financial resources required for cotton cultivation. For an economy with limited capital, the opportunity cost of tying up financing in this way is immense.

(iii) **Losses due to low gin outturns.** The ginned cotton outturn in Tajikistan ranges between 24 and 32%, as compared with an average of 36% for Western gins – a difference of 4 to 8%. The reasons for the low outturns are many, including old machinery which is not well maintained, a captive cotton supply because tax code provisions provide an incentive for local authorities to exert pressure on farms to have their cotton ginned in specific gins, providing little incentive to gins to compete and improve productivity, and lack of accountability of the physical cotton received by gins leading to the theft of cotton by unscrupulous workers. Table III.3 calculates the potential losses due to low cotton outturns, at different outturn levels.

### Table III.3: Differential Earnings Due to Varying Gin Outturns

<table>
<thead>
<tr>
<th></th>
<th>24% outturn</th>
<th>32% outturn</th>
<th>36% outturn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw cotton grown in 2003 (tons)</td>
<td>537,358</td>
<td>537,358</td>
<td>537,358</td>
</tr>
<tr>
<td>Ginned cotton fiber at varying outturns</td>
<td>128,966</td>
<td>171,955</td>
<td>193,449</td>
</tr>
<tr>
<td>Average fiber prices in 2003 (USD per ton)</td>
<td>1,200</td>
<td>1,200</td>
<td>1,200</td>
</tr>
<tr>
<td>Earnings from fiber sales</td>
<td>155</td>
<td>206</td>
<td>232</td>
</tr>
</tbody>
</table>

Source: Staff estimates.

(iv) **Inverse relationship between cotton quality and ginning delays.** Cotton is a delicate and easily degradable commodity. If raw cotton is not ginned 90 days after being picked, its quality deteriorates. This is because cotton starts absorbing moisture which adversely affects its quality and hence the price at which it sells. Gins in Tajikistan do not have adequate or proper storage facilities. According to agronomics, cotton quality can deteriorate 5 – 10% after the first 90 days, depending on specific storage conditions. It is difficult to calculate how much Tajik cotton quality deteriorates, but it can be said for certain that the quality deteriorates.

3.15. The main cause for these problems is the monopsonistic structure of the ginning sub-sector. Gins are owned by input suppliers, farms are forced to have their cotton ginned in specific gins, and primary cotton grading is done by gins. This report does not look into the opportunity cost of these losses in terms of tax revenue and export earnings forgone, but these indirect impacts are significant.

3.16. **Interference in a Policy of No Interference:** According to a Presidential Decree of 2000 the government is not supposed to interfere with the production decisions of farms. This decree is intended to free farms from the interventions of local authorities. However, the central Government continues to set yearly cotton production targets. For 2004, the production target is 610,000 tons of raw cotton. These targets are passed through the bureaucratic chain just as in Soviet times, with local governments interfering in farm cultivation decisions. This propagates and strengthens the existing financing and ginning arrangements and is fundamentally contrary to the stated policy of no interference, and it creates gray areas for targeted state interventions.
A scenario analysis carried out by the ADB to assess cotton profitability in Tajikistan shows that Tajikistan has a comparative advantage in cotton production under a fully liberalized and privatized environment. This means that, if left to their own devices, farmers will choose to grow cotton under a liberalized environment. However, the research also points out that at present yield levels and distortions (highlighted above) it is not profitable for farmers to grow cotton. It is probably for this reason that the Government is encouraging farms to grow cotton. The correct policy would be to address and solve these distortions so that yields can increase and the economy can enter the virtuous cycle stylized in Figure 1. Keeping this in mind, the Government should not fear that in the absence of state targets cotton production will fall. However, in the presence of distortions and the absence of planning and state interventions, there is a possibility that, given crop choice farmers will choose to grow other crops.

Cotton Grading and Pricing System: A cotton grading system serves the following purposes: (i) it enables the quality of the product to be fully described, (ii) it makes it possible to maintain a high level of integrity of standards that is recognized by the buyer and seller, (iii) it provides transparency in the operation, and (iv) it facilitates operation at a reasonable cost.

The international standard of cotton grading is by default the US Department of Agriculture (USDA) standard. This standard is used by major cotton exporting countries such as Australia. Tajikistan produces less than 1% of world cotton production but has its own classification system. For a foreign buyer, the Tajik grading system does not fulfill the above four criteria. This makes it risky for foreign buyers to buy Tajik cotton from overseas, thus impeding competition on the demand side. In addition, this parallel system adds unnecessary costs for the Government and adds another layer of activity for buyers who need to link the Tajik standards to the default world standard.

Another area of concern is that in Tajikistan gins determine the quality of the cotton that is brought to them for processing. As gins are owned by loan brokers, the owners have an incentive to misinform farms to the effect that their cotton is of a lower quality, to buy it from them at a lower price, and to sell it for a higher price. Since farms have no choice but to use a specific gin, if the gin disputes the cotton quality it is easy for the gin to de-grade the cotton. This is possible because of the lack of an independent verification and certification system for cotton production by farms.

The cotton exchange fixes a minimum cotton price that is calculated using a formula based on the latest Liverpool Cotton Exchange price and adjusting it downwards for costs incurred in transportation. The reason for fixing a minimum price is to ensure that buyers do not exploit farms by buying at low prices. The mechanism has its advantages and disadvantages. The advantages are that the price is calculated in a transparent manner and provides a benchmark for farms for selling their cotton. In a system where the majority of the farmers do not have a say in the financial affairs of the farm, then a fixed minimum price provides a reference point for farmers to access the possible profitability of the farm.

The disadvantage is that this system is providing cotton at lower rent-adjusted prices to loan brokers, because rents extracted from cotton production act as a de facto subsidy to the financiers. For agents who are not part of the rent extraction chain, such as spinning mills or other buyers, the competition becomes unfair – in that the price paid by loan brokers and foreign financiers (including rents) is lower than that paid by agents outside of the rent chain. This provides a disincentive to competition and further vertical integration in the cotton sector. It is

difficult to establish the level of subsidy in this report, but this issue needs to be explored further in the context of the comprehensive a agriculture sector study.

3.23. **Legislative Clarity on Farm Restructuring:** From the time land reform started in Tajikistan until the first quarter of 2004, a total of 71 decrees and resolutions were passed by the Government (see Annex V, attached). There are three main issues regarding the numerous decrees and resolutions passed to date.

(i) **The lack of clarity and depth of the laws:** The decrees and resolutions have been brief and often have not been adequately followed up by regulations. Some decrees lack specificity, even contradict one another and are open to differing interpretations. For example, the Law on Dekhan Farms does not clearly lay down the modalities of restructuring, the responsibilities of farm management, the rights of farm workers, or the rules governing the conduct of business. Different local governments have implemented laws in the way in which they choose to interpret them.

(ii) **Lack of dissemination of the changes in the laws:** From field visits conducted at cotton growing farms and in interviews with farmers, it is apparent that farmers are not aware of the changes in the laws and the decrees that are fundamental anchors of the reform process. This finding has been confirmed by civil society organizations working in the area of land reform in Tajikistan. Lack of knowledge of the laws leaves room for the exploitation of stakeholders by rent seekers.

(iii) **The cost of legal redress:** In far-flung cotton growing areas there is a very limited presence of personnel from the Ministry of Economic Arbitration. If farmers have issues that require redress they have to travel to provincial capitals. The cost of the entire trip, along with court fees, deters farmers from utilizing such services.

3.24. Analyzing the laws and decrees individually is outside of the scope of the PSIA. The issues highlighted above need to be looked into detail under the World Bank follow-up project on facilitating farm privatization further in Tajikistan.

III.3 **Stakeholder Analysis of the Cotton Sector**

3.25. From the impact assessment of individual and collective land use tenure, it was concluded that privatization that results in the transfer of individual land tenure to farmers is the preferred alternative. The discussion in this chapter has highlighted the distortions in the production and marketing chains and has quantified their extent. Based on this information, a detailed stakeholder analysis was carried out in consultation with different stakeholders in the cotton sector as well as the civil society. The aim of this analysis was to determine the following:

(i) The costs and benefits of privatization for each stakeholder

(ii) The importance of each stakeholder for the success of privatization

(iii) The degree of influence of the stakeholder over the privatization process.

3.26. From the stakeholder analysis it can be gathered that *privatization that results in the provision of land use tenure to individual farmers* would be opposed by farm managers, loan brokers – both foreign and local – and gin owners. This opposition primarily results from the fact that these stakeholders are extracting rents from the cotton sector at the expense of farmers. These are the same groups that would favor the preservation of the status quo.
3.27. The stakeholder analysis also shows that central Government in principle would be in favor of privatization on all accounts except the issue of the loss of direct control over farms. The reason for this support stems from the need to increase the productivity of farmlands and to thereby improve the fiscal and external positions. In addition the equitable privatization of farmlands is a stated objective of the Government in the PRSP. Local governments, on the other hand, benefit from the current organizational setup because they have control over farms and have an incentive to collude with rent-seeking stakeholders to maintain the status quo. However, once local authorities were to understand that privatization and liberalization would have a positive effect on yields and hence revenues, they would no doubt be supportive of the process. The detailed stakeholder analysis matrix is presented here.
Matrix 1: Identification of Stakeholder Groups, Their Interests, Importance and Influence

<table>
<thead>
<tr>
<th>Stakeholder Groups</th>
<th>Interest(s) at Stake in Relation to Privatization of Cotton Farmlands</th>
<th>Effect of Privatization on Interest(s)</th>
<th>Importance of Stakeholder for Success of Privatization of Cotton Farmlands</th>
<th>Degree of Influence of Stakeholder over Privatization of Cotton Farmlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers</td>
<td>1. Increase in income and welfare 2. Increase in productivity 3. Crop choice freedom 4. Freedom to procure inputs 5. Improve gender balance 6. Social service previously provided by collective farms</td>
<td>+/+/+/-</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>AgroInvest Shareholders</td>
<td>1. Profits from financing cotton 2. Control over cotton sector</td>
<td>-/-</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Stakeholder Groups</td>
<td>Interest(s) at Stake in Relation to Privatization of Cotton Farmlands</td>
<td>Effect of Privatization on Interest(s)</td>
<td>Importance of Stakeholder for Success of Privatization of Cotton Farmlands</td>
<td>Degree of Influence of Stakeholder over Privatization of Cotton Farmlands</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Loan Brokers (Future Contractors) | ① Profits from input supply due to competition  
② Reduce farm debt strangle hold  
③ Patronage of farm associations and farm managers | -                                      | 2                                                                 | 4                                                                         |
| Ginnery Owners                 | ① Patronage with local government and loan brokers  
② Forced processing of raw cotton at specified gins | -                                      | 3                                                                 | 4                                                                         |
CHAPTER IV
IMPACT ANALYSIS OF DISTORTIONS

4.1. This chapter will now analyze the poverty and social impact of the distortions presented in chapter III. The analysis will be carried out using quantitative and qualitative methods. The qualitative analysis will be based on the stakeholder analysis presented and on interviews conducted during field research. The quantitative analysis will assess the welfare of cotton farmers using the Tajikistan Living Standard Survey 2003 (TLSS).

IV.1 Poverty and the Social Impact of Distortions

4.2. Losses Due to Inefficiencies and Rent Seeking: The current distortions cost the economy a cumulative loss of US$63 and US$105 million annually: a breakdown by component is provided in Table IV.1.

Table IV.1: Losses Due to Inefficiencies and Rent Seeking

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative loss as percent of GDP</td>
<td>4.0</td>
<td>6.7</td>
</tr>
<tr>
<td>Cumulative Loss</td>
<td>62.9</td>
<td>104.7</td>
</tr>
<tr>
<td>Low gin out-turns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(low 32% to high 24%)</td>
<td>51.6</td>
<td>77.4</td>
</tr>
<tr>
<td>Financial costs due to long gin processing time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(low interest rate 14%, high interest rate 30%)</td>
<td>2.8</td>
<td>6.0</td>
</tr>
<tr>
<td>Rents from input finance (low 10% over invoicing, higher 30%)</td>
<td>8.5</td>
<td>21.3</td>
</tr>
</tbody>
</table>

Source: Staff estimates.
Note: In US$ unless stated otherwise.

4.3. Inefficiencies in the ginning sub-sector account for the majority of direct losses of earnings in the cotton sub-sector (low gin outturns and higher financial costs). However, rents from input finance cause significant indirect losses, in addition to the direct resources extracted by input financiers. The indirect losses stem from the cotton yields that are lower than they would otherwise be. Due to rent seeking in input finance (Section III.2) cotton yields are at 1.89 tons of seed cotton per hectare. If input finance is provided competitively (as is the case with IFC SAS) it has been demonstrated that yields can be increased to 2.8 tons of seed cotton per hectare. Thus, it can be concluded that rent seeking in input finance is resulting in significant cotton production foregone. Calculations in Table 1 show that if average seed cotton yields were at 2.8 tons per hectare, the economy could earn about US$100 million more each year.

4.4. Losses in the cotton sector affect the government as well as farmers. On the Government side, these losses translate into lower tax earnings from cotton taxation and lower foreign exchange earnings, which constrains the public sector resource envelope and hence limits the
Government’s ability to spend on social and infrastructure needs. The poverty and social impact of this loss depends on the expenditure priorities of the Government. Given the immense need to improve the social and productive infrastructure, the lack of resources translates into the lower quality of health care, low investment in the educational system, and lack of adequate upgrading of physical infrastructure. This constrains economic growth and income generation for all sectors of the economy.

4.5. On the farmer side, the impact of the loss of these resources means lower incomes and hence expenditures. Extreme poverty is most prevalent in the cotton growing areas of Tajikistan. With resource leakages due to inefficiencies and rent-seeking, and the resultant lower yields, it is difficult for farmers to move out of poverty. In addition to forgone resources, the current cotton production and marketing chains do not provide farmers with a share of cotton proceeds, as presented below.

4.6. **Pass-through of Cotton Proceeds:** The current organizational setup of farms under SFR, and the distortions prevalent in the cotton production and marketing chains negatively affect the incomes of farmers. Figure IV.1 shows the distribution of cotton proceeds within the production and marketing chains. The notional pass-through bar shows the how proceeds should be distributed to each stakeholder if the system functioned in the way that it was designed to function. The effective pass-through bar shows how proceeds are actually being distributed in the current system. The main points to take note of between the notional and the effective pass-through are the following:

(i) Farmers are not receiving adequate wages. Farmers should notionally receive US$111 in terms of wages but effectively are only receiving payment in-kind in terms of cotton stocks and limited cotton seed oil. When monetized, this in-kind payment is not even one-fourth of the wages the farmers should receive.

(ii) Whereas farms should be making a profit, effectively they are making losses which are adding to farm debts.

(iii) Proceeds that should be going towards wages and farm profits are being absorbed by loan financiers and in the cost of ginning. Effective costs are higher due to rent seeking and inefficient ginning processes.
Figure IV.1: Distribution of Cotton Proceeds within the Production and Marketing Chains

Pass-through of Cotton Proceeds

Source: Based on data from the Ministry of Agriculture and staff estimates.

4.7. The bar on the right labeled “higher yields” shows the projected impact of privatization and liberalization. With the same level of inputs financing in a competitive environment yields will rise. Higher yields in an environment where notional pass-through prevails, will result in the farmer and the farm making higher profits. The welfare analysis considers how the current effective pass-through affects the farmer.

4.8. Impact on Poverty: The restructuring of farms has effectively resulted in farmers becoming wage laborers. Since wages are often in arrears, farmers’ income and consumption are severely restricted. Even though Tajikistan is producing and exporting a lucrative crop, farmers are not adequately compensated for their work.

4.9. Labor Migration: The pass-through analysis shows that currently farmers are not getting adequately compensated for their labor and that farms are not making a profit. In Tajikistan, this situation has encouraged men from agricultural families to migrate to Russia as seasonal labor while leaving their womenfolk behind to work on the cotton farms so that families can maintain their membership, and hence future claims on land, in farms. From estimates carried out by the International Organization for Migration (IOM), Tajikistan officially has 600,000 migrants in FSU countries, 40.8% of them from Khatlon.\(^6\) Migration has had both positive and negative affects on welfare. The positive impact has been on the incomes of families in the form of remittances. The negative impact has been on the dynamics of family lives: as men move out for extended time periods, there is a greater tendency for family cohesion to weaken. In addition, research carried out by the IOM shows that sexually transmitted diseases are on the increase in Tajikistan. Migration also puts a disproportionate burden of work on children in households.

\(^6\) IOM (2003), *Labor Migration from Tajikistan* (page 32).
During cotton picking season children are mandated to pick cotton and during this time schools remain closed (extra two months as compared to other country schooling years). The second order impact of these issues need to be further studied.

4.10. **Access to Education and Health Care:** The farm restructuring process and the subsequent transfer of schools and kindergartens from the farm to the relevant sector ministry placed greater budgetary requirements on the Government. Lack of financial resources meant that the Government could not provide these services in adequate quantity or quality. This reduction in the quantity and quality of social services has had a significantly negative but unquantifiable impact on farmers. The resource wastage due to distortions translates into public social services forgone. Improved services could be provided through the easing of Government budgetary constraints.

4.11. **Impact of Privatization on Distortions:** Privatization will in itself does not address the other distortions within the input finance and ginning sub-sector. It is thus important for the privatization to move hand-in-glove with the liberalization of the sector. Chapter V will present some options that can be taken by government. Privatization along with liberalization would allow the farmer to have crop choice and control over financial decisions pertaining to his/her lands. Liberalization measures dealing with problems in input finance and inefficiencies in the ginning sector would allow for the development of alternative crop financing mechanisms and would improve gin efficiency by instilling competition within the sub-sector. These measures would lead to higher yields, higher incomes, and a reduction in poverty.

IV.2 **Quantitative Welfare Analysis**

4.12. In conducting the welfare analysis using the Tajikistan Living Standard Survey (TLSS) 2003, the PSIA encountered problems in directly identifying cotton farmers in the dataset. There were only 79 households within the dataset that grew cotton, out of 1,572 rural agriculture households in the agriculture module of the TLSS. These observations were not enough to conduct robust quantitative analysis. The PSIA then used another approach by identifying the cotton farm worker as the wage earner in the agriculture sector in cotton growing districts in either Khatlon, Sughd, or RRS. Table IV.2 shows the definition we use in this paper to identify cotton farm worker and cotton farm household.
4.13. **Demographics of Rural Farm Households:** Using the above definition, we created a tabulation of households by farm-nonfarm, cotton-noncotton status, and by region as can be seen in Table IV.3.

### Table IV.3: Households by Farm and Non-farm by Region

<table>
<thead>
<tr>
<th></th>
<th>GBAO</th>
<th>Sughd</th>
<th>Khatlon</th>
<th>Dushanbe</th>
<th>RRS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural:</td>
<td>26,175</td>
<td>250,121</td>
<td>244,304</td>
<td>-</td>
<td>168,687</td>
<td>689,288</td>
</tr>
<tr>
<td>Farm:</td>
<td>16,723</td>
<td>132,622</td>
<td>158,216</td>
<td>-</td>
<td>99,467</td>
<td>407,029</td>
</tr>
<tr>
<td>Cotton</td>
<td>12,797</td>
<td>88,124</td>
<td>154,435</td>
<td>-</td>
<td>55,259</td>
<td>310,616</td>
</tr>
<tr>
<td>Non cotton</td>
<td>3,926</td>
<td>44,498</td>
<td>3,781</td>
<td>-</td>
<td>44,208</td>
<td>96,413</td>
</tr>
<tr>
<td>Non farm</td>
<td>9,452</td>
<td>117,499</td>
<td>86,088</td>
<td>-</td>
<td>69,220</td>
<td>282,259</td>
</tr>
<tr>
<td>Urban</td>
<td>4,986</td>
<td>116,335</td>
<td>63,984</td>
<td>137,110</td>
<td>34,901</td>
<td>357,317</td>
</tr>
<tr>
<td>Farm:</td>
<td>873</td>
<td>13,960</td>
<td>4,653</td>
<td>1,039</td>
<td>5,817</td>
<td>26,342</td>
</tr>
<tr>
<td>Non farm</td>
<td>4,113</td>
<td>102,375</td>
<td>59,331</td>
<td>136,071</td>
<td>29,084</td>
<td>330,975</td>
</tr>
<tr>
<td>Total</td>
<td>31,161</td>
<td>366,457</td>
<td>308,289</td>
<td>137,110</td>
<td>203,587</td>
<td>1,046,605</td>
</tr>
</tbody>
</table>


Nearly 85% of the lowest quintile of the farm households are cotton households (Table IV.4), which means that most of the poor farm households grow cotton or work in the cotton sector.
Table IV.4: Cotton and Non-cotton Families by Quintile

<table>
<thead>
<tr>
<th></th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton family</td>
<td>84</td>
<td>83</td>
<td>73</td>
<td>65</td>
<td>67</td>
<td>74</td>
</tr>
<tr>
<td>Non cotton family</td>
<td>16</td>
<td>17</td>
<td>27</td>
<td>35</td>
<td>33</td>
<td>26</td>
</tr>
<tr>
<td>Farm family</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>


4.14. Determinants of Household Welfare: Box 1 presents the estimates of the relationship between the logarithm of per capita consumption (deflated by regional price index) and access to land and a set of household characteristics, using OLS regression. The regression is applied to farm households in rural areas. The result suggests the following:

(i) Households with access to land have a higher per capita expenditure.

(ii) Households that either own land or own and rent land have a higher expenditure per capita.

(iii) Cotton families have a lower per capita expenditure than non-cotton families.

(iv) The size of land (either owned or rented) and the years of schooling of the household head are positively related to per capita expenditure.

(v) The size of the household is negatively related to per capita expenditure.

**BOX-1: Determinants of household per capita consumption**

Regression with robust standard errors

<table>
<thead>
<tr>
<th>Number of obs = 1572</th>
<th>F(16, 1555) = 33.93</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob &gt; F = 0.0000</td>
<td>R-squared = 0.2619</td>
</tr>
<tr>
<td>Root MSE = 0.48998</td>
<td></td>
</tr>
</tbody>
</table>

| lrpce  | Robust Coef. | Std. Err. | t     | P>|t|  | [95% Conf. Interval] |
|--------|--------------|-----------|-------|------|------------------------|
| ownland | .1999428     | .0774102  | 2.58  | 0.010| .0481035 .3517822     |
| renland | .0975034     | .105623   | 0.92  | 0.356| -.1096752 .304682     |
| oirland | .0941761     | .0378088  | 2.49  | 0.013| .0200145 .1683377     |
| cottonf | -.0652777    | .105623   | -2.09 | 0.037| -.1265732 -.0039821   |
| headfem | -.0168699    | .0431648  | -0.39 | 0.696| -.1015373 .0677975    |
| headage | -.0037765    | .0058681  | -0.64 | 0.520| -.0152866 .0077337    |
| headysch | .0262282    | .0052872  | 4.96  | 0.000| .0158573 .036599      |
| heademp | -.0076458    | .0052872  | -0.17 | 0.862| -.0938474 .0785557    |
| child   | -.2597173    | .0569267  | -4.56 | 0.000| -.3713786 -.1480561   |
| mulgen  | .0663039     | .0418937  | 1.58  | 0.114| -.0158701 .1484779    |
| tot_ind | -.0504017    | .0051519  | -9.78 | 0.000| -.060507 .-0402964    |
| tot_land | .0007731    | .0026768  | 2.89  | 0.004| .0002478 .0012983     |
| khatlon | -.450578     | .0388227  | -11.61| 0.000| -.5267283 -.3744277   |
| sugdian | -.3798838    | .0381164  | -9.97 | 0.000| -.4546487 -.3051189   |
| gbao    | -.7041867    | .0449375  | -15.67| 0.000| -.7923311 -.6160423   |
| _cons   | 4.313127     | .1771683  | 24.34 | 0.000| 3.965613 4.660641     |

4.15. The coefficient of regression indicates that ownership of land is an important determinant of household welfare. The result also shows that cotton families or families in cotton regions have lower welfare.
4.16. Determinants of Probability of Being a Cotton Family: We wish to identify the determinants of probability of being a cotton family. We use a probit model where the dependent variable is “cottonf”, which takes on two unique values, 0 and the value 1. The value 0 denotes a cotton farm family and 1 denotes a non-cotton farm family. The independent variables are access to land and other sociodemographic characteristics of the household. The results are presented in Box 2.

| cottonf | dF/dx   | Std. Err. | z    | P>|z|   | x-bar | 95% C.I.   |
|---------|---------|-----------|------|-------|-------|------------|
| ownland* | .1326752 | .0533229  | 2.92 | 0.003 | .930662 | .028164    |
| renland* | -.0369575 | .0795602 | -0.50 | 0.619 | .023537 | -.192893   |
| owrland* | -.1024091 | .0368641 | -3.07 | 0.002 | .177481 | -.174661   |
| headfem* | .0177573  | .0266708  | 0.64 | 0.520 | .121501 | -.034517   |
| headage | -.001909  | .003953   | -0.05 | 0.961 | .493416 | -.007939   |
| headage2 | 1.180-06  | .0003833  | 0.03 | 0.975 | 263.637  | -.000074   |
| headysch | -.000818  | .0035688  | -0.23 | 0.819 | 7.4612   | -.007813   |
| child*   | .0897226  | .0348755  | 2.83 | 0.005 | .799618 | .021368    |
| mulgen*  | .0449593  | .0284555  | 1.53 | 0.127 | .328244  | -.001812   |
| tot_ind* | .0014473  | .000139   | 1.01 | 0.314 | 3.57589  | -.003638   |
| tot_land | .0038367  | .0003386  | 1.07 | 0.000 | 35.2659  | .001896    |
| khatlon* | .347344   | .01895    | 14.00 | 0.000 | 346.056  | .310203    |
| sugdian* | .1141713  | .0187883  | 5.49 | 0.000 | .290076  | .077347    |
| gbao*    | .1228963  | .0167935  | 5.80 | 0.000 | .14631  | .089982    |

Box 2: Probability of being a Cotton Family

|  | Number of obs = 1572 |
|  | LR chi2(15) = 413.15 |
|  | Prob > chi2 = 0.0000 |
|  | Pseudo R2 = 0.2402 |

4.17. The results show the following:

(i) The probability of being a cotton farm family increases as the household owns land. This is consistent with the larger farms growing cotton.

(ii) The probability of being a cotton farm family decreases as that household owns and rents land. This means that households that both own and rent land would not grow cotton or send their family members to cotton farms elsewhere. In light of the distortions in the cotton production and marketing chains presented earlier, this observation is plausible.

(iii) As the size of land increases, the probability that family is a cotton family increases. This means that a family with a larger land size tends to grow more cotton than a family with a smaller land size, although the probability impact of this variable is relatively small (see the dF/dx figure in Box 2).

(iv) As the household head is employed in the rural agriculture sector, the probability of the household being a cotton family increases.

(v) A family that lives in Khatlon or Sugd tends to be a cotton family. The probability impact of this variable is significantly large.
CHAPTER V
POLICY ADVICE – A MENU OF OPTIONS

5.1. Based on the analysis presented in the previous chapters, this chapter presents a menu of two policy options along with the costs and benefits associated with each option. For each option, the feasibility and complimentary policies needed will be discussed.

V.1 OPTION: Privatize all cotton farms on the lines of FPSP, while not altering other aspects of the cotton production and marketing chains.

5.2. Impact: Farmers will be assured land tenure and have appropriatory rights on land, thereby improving farmer welfare and increase incentives for farmers to enhance productivity. The control of farm managers will diminish. Cotton yields would improve, as farmers will be able to use seed capital provided as part of the FPSP privatization to buy inputs at competitive prices. However, because distortions and inefficiencies in the production and marketing chains will remain, the proceeds from cotton cultivation will continue to be lower because quality of ginned cotton would be lower and marketing carried out monopsonistically.

5.3. Beneficiaries: The clear beneficiaries will be farmers in terms of higher incomes and access to land. The Government will also benefit from enhanced revenue collection from cotton taxes and higher export earnings.

5.4. Losers: Farm managers will lose control of farms. Control of input financiers (loan brokers) over cotton production will weakening because farmers will have seed capital and thus choice of input procurement. Hence the rent seeking from inefficient input supply will be significantly reduced, as will the collusion between input supplies and unscrupulous farm managers.

5.5. Feasibility and complimentary policies needed: This option is preferred over maintaining status quo because it provides direct control of the land to the farmer thereby making the farmer an active economic agent in the cotton production activities. However this option is not the best solution on the following grounds.

- Does not address the distortions within the ginning and marketing chains that are vital elements of the cotton value chains
- Rent capture will only shift from input suppliers to gin owners and cotton marketers.

5.6. In terms of complimentary policies there will be need to ensure that land tenure is not revocable. This will assist in effective collateralization of land\(^7\) and development of the financial

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\(^7\) In the present situation land can be rented but cannot be traded or transferred to non-family members. This impedes in collateralization of land
sector. As in the case of Option 1, the Government would need to ensure that the social services previously provided by the collective farms transferred to the state at privatization are run efficiently. Because higher yields would translate into enhanced revenue to government, there will be some fiscal space to increase spending on social services.

V.2 OPTION 2: Privatize all cotton farms on the lines of FPSP and liberalize the production and marketing chains. Specifically, the liberalization measures including their rationale would include:

- The supply of inputs in-kind should be barred, and efforts should be undertaken to develop alternative crop financing mechanisms like SAS

5.7. **Rationale:** It is still not clear why AgroInvest engaged loan brokers at a mark-up in the first place. Nor is it clear why loan brokers were allowed to provide inputs in-kind to farms. It is also not clear why the quoted prices of inputs were not scrutinized. It is possible that all these practices were established because the system of crop financing was in transition. It is clear and is accepted by farm managers, local governments, civil society and farmers that inputs supplied in-kind by loan brokers were generally overpriced, of inferior quality, and delivered late. This causes significant problems for farmers and is arguably responsible for lower yields, and for deterioration in the terms of trade and hence debt accumulation.

5.8. The IFC SAS provides a very robust control check for the above assertion. As presented earlier in this PSIA, the FOM is a crop finance and market development model. SAS essentially provides input credit in a timely manner. The farmer can choose to take cash or ask for input from SAS. Inputs are provided at competitive rates and interest on loans is 14% from members of SAS and 16% from non-members. SAS allows farmers to repay loans in terms of cotton or cash and assists in the marketing of cotton at competitive prices. This is essentially what the loan brokers do for farms except that the use of loan brokers is fraught with issues highlighted in the previous paragraph. In Sughd province, SAS farmers have registered average yields of 2.5 tons per hectare, while non-SAS restructured farms are registering yields of about 1.9 tons of raw cotton per hectare. The only perceptible difference in the two arrangements is the timely, competitive, and efficient delivery of inputs to farms. SAS farms are also repaying their debts.

5.9. It is thus important for Government to bar the practice of input supply by loan brokers to farms, and to introduce transparency in the future contract – a template that clearly shows the amount of money borrowed. The nominal interest rate charged with the repayment terms will go a long way towards introducing transparency into the current system.

5.10. At the same time, the farm privatization effort should facilitate the formation of family farms of adequate size to be able to effectively borrow resources from private sources, provided that they are not taxed or over indebted. The study of the optimality of size and the development of alternative crop financing mechanisms needs to be further explored. Enforcing the Government decree of non-interference in farm cropping decisions.

5.11. It is also crucial that the Land Code explicitly allow for renting, leasing, mortgaging, trading and transferring of land use rights. This move is central to the development of the financial sector and for provision of financial services to farmers.
Farm debts need careful scrutiny and the issue addressed within a comprehensive cotton sector liberalization program. It is crucial that farm debts must not recur.  

5.12. The treatment of farm debts is important for the privatization process. Box 3 provides a discussion of how this issue can be resolved.

**Box 3: Resolving Cotton Farm Debts in Privatization**

According to work carried out by the Asian Development Bank, the total stock of farmland debts outstanding as of January 1, 2004 was US$ 65 million. There are various weaknesses with this data. These are:

- Principal and interest breakdown is not known
- Data collection methodology is not clear
- Discrepancies and inconsistencies exist between National Bank database, AgroInvest and loan financiers

The first step in devising a debt resolution policy is to establish the magnitude of debts. A committee comprising all stakeholders needs to be constituted. This committee should reconcile the figures and agree to a final set of numbers. The stakeholders involved include farms (borrowers), Government (guarantor) and loan financiers.

The second step entails resolving the reasons that led to the accumulation of these debts - as presented in Section II.2. If these issues are not resolved then the flow of debt accumulation will continue. The resolution of debts has to go hand-in-hand with the resolution of distortions in the cotton production and marketing chains.

Once the debt numbers have been established the Government has main choices:

1. Suspend further accumulation of debt on arrears outstanding and let farms pay down debts over a period of 5 years. However, the distortions highlighted herein have to be addressed for farms to increase productivity and have the ability to repay debts. Here it is crucial to know that even in the low distortions case total debt of US$ 65 million is lower than the amount lost each year due to inefficiencies (see table 5).

2. Suspend further accumulation of debt on arrears outstanding. Distribute the principal component of debt to farms, declare a moratorium of 2 years on repayment of the principal. Privatize farms and build into the privatization process a clause that farmers have to repay principal amount within 2 years of the end of the moratorium. Failure to pay will result in the accumulation of interest at market rates with a possibility of land tenure rights being revoked. On the interest component, the Government, local loan brokers and international financiers each write-off one-third of the amount.

5.13. In both options presented, the Government has to play a key role in terms of the privatization and the liberalization of the cotton production and marketing chains as well as in settling the debt issue. It is equally important to note that farms that have had recourse to alternative financing (via SAS) have started paying off loans.

3. **The link between cotton taxation and gin location needs to be severed**

5.14. **Rationale:** The current taxation system is structured so that local governments collect taxes on cotton processed in ginneries located in their respective jurisdictions. Local governments try to maximize their collections by forcing farms to process cotton in gins located within their jurisdiction. These gins are generally controlled or owned by loan brokers who provide inputs to farms. Local government pressure on farms to process inputs in specific gins assures a gin of a “captive” cotton supply. To begin with, gins have an incentive not to increase efficiency because of reasons presented in section III.2. By providing a “captive” cotton supply, local governments impede competition between gins and leave farmers with little or no bargaining room with gins for improving efficiency. By instituting an alternative tax regime that ensures that local governments continue to receive their taxes from cotton grown by farms in their respective jurisdictions, while changing the gin as the tax unit, will go a long way towards instituting competition between gins.

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5.15. The functioning of the current cotton taxation system needs to be reviewed systematically with respect to revenue sharing between the central Government and local governments, to the effective tax rate, and to the cost of the current system in terms of output forgone. An alternative system that would break up the status of gins as tax units needs to be designed in the context of scaling up farm privatization. The alternative tax collection mechanism would need to ensure local government tax receipts and effective and constant tax rates on cotton, and an efficient collection mechanism. At the same time, the central Government should inform the farmers of the fact that they are not bound to have their cotton processed in a specific gin, to prevent unscrupulous local government officials from taking advantage of uninformed farmers.

5.16. **Rationale:** The Government by decree has stopped local governments from interfering in the crop production and marketing decisions of farms. However, the central Government still devises tentative yearly cotton production targets (for 2004 the target is 610,000 tons of raw cotton). Central and local government budgets are based on this indicative target, which is very optimistic. These indicative targets are distributed through the governance structures down to the local government level. Government officials, who worked for the last 70 years under socialism, take these indicative targets as plans that need to be fulfilled and pressure farmers to grow cotton. The farm manager who retains his/her position with the tacit support of local authorities abandons strategic crop planning and merely goes for cotton cultivation, even though the inputs received are at inflated rates, are of poor quality and are delivered late. Because current yields per hectare are lower than those required to fulfill the plan, the farm manager decides to plant more cotton than is feasible, thus ignoring the crop rotation requirement. This degrades land quality in terms of potential fertility.

5.17. It is important to consider the formation of an independent grading agency, conforming to world cotton standards, the elimination of non-tariff barriers to export, and the promotion of competition in cotton procurement within an Integrated Cotton Development Program.

5.18. **Rationale:** In the current cotton marketing and distribution setup it is the gin that grades the quality of cotton that farms bring for processing. Because of the shortage of working capital and the long turnaround times in Tajik gins, farms often sell raw cotton to gins. This gives gins the incentive to under-grade the cotton produced by under-grading, gins buy cotton at low prices and sell it at higher prices. Farms do not have recourse to an independent grading agency. In addition, Tajikistan maintains its own rating standard for cotton, which does not conform to the USDA standard (some of the resultant issues have been presented in section III.2). The main issues involved in maintaining Tajik specific standards are the following: (i) foreign buyers will be unsure about the quality of Tajik cotton and will be deterred from buying cotton from Tajikistan; and (ii) another layer of bureaucracy is added to the current system. Exporting cotton entails a convoluted and cumbersome documentation process that requires a lot of knowledge, contacts in the cotton trade chain, and costs time and commission charges. Export procedures need to be simplified. In addition, more competition in the cotton buying arena has to be encouraged. Cotton auction centers should be set-up in each cotton growing district where buyers could bid for and buy raw cotton.

5.19. International donor agencies, including the Bank, have successfully established independent cotton grading agencies in India, Pakistan and Zimbabwe. The Government of Tajikistan needs to be made aware of the benefits of establishing an independent cotton grading agency in the context of an integrated cotton development program in the cotton sector. The feasibility of cotton price setting also needs to be considered in the establishment of cotton auction centers. Currently, the Tajikistan cotton exchange determines a minimum price for cotton.
However, buyers treat this price as a ceiling rather than a floor, and use “rents” as de facto subsidies to buy cotton at a lower effective price. Auction centers will increase competition which will translate into higher prices for farms. This entire issue has to be holistically considered in the context of scaling up farm privatization in Tajikistan.

5.20. **Impact:** This option will increase seed cotton yields most and ensure farmers receive adequate share of cotton proceeds whilst other agents also receiving adequate compensation for economic service provided. Higher yields and incomes for farmers will help stimulate the economy, as presented in Figure 4.

5.21. **Beneficiaries:** The principle beneficiaries will be farmers. Second order benefits from multiplier effects of higher spending will be spread across the economy. From calculations carried out, cumulative benefits would range from 8%-10% of GDP. The Government budget fiscal and external positions will improve as a result of higher yields and stimulus to the economy.

5.22. **Losers:** Stakeholders who are benefiting from the current distortions and inefficiencies will lose their rents. The main losers are input financiers (foreign and domestic) and gin owners. The losers are few but well entrenched. These agents will oppose liberalization openly and tacitly.

5.23. **Feasibility:** In terms of equity and efficiency this option is the most feasible for stimulating the agriculture sector and reducing poverty. Implementing policies that affects entrenched rent seeking stakeholders will require significant determination by the Government. However, there are clear and present benefits of privatization and liberalization of the cotton sector.

V.3.  **A Question of Trade-offs**

5.24. This PSIA has provided an analysis of the income implications of cotton farmland privatization. The main issues impeding cotton sector development have been presented along with two options for moving ahead with privatization that will have different impact on cotton sector productivity and income distribution.

5.25. The Government has the choice of maintaining status quo. However, by maintaining status quo the Government would implicitly decide to keep the vested interests intact which would continue to exploit the farmer. This decision would translate into low yields and incomes for farmers, low cotton tax revenues and subsequent export earnings, and high rents for the vested interests. What is important is that the Government clearly recognize that status quo is a choice and has significantly negative consequences for the entire economy.

5.26. Alternatively the Government can choose to adopts a comprehensive privatization and liberalization program that will improve productivity and incomes for farmers and the country as a whole (Option 2) whilst eliminating distortions and rent seekers from the sector or adopt a privatization program that will preserve the vested interests in the cotton production and marketing chains whilst providing greater control of land use rights to the farmer (Option 1). Both these options will be an improvement over status quo. However, Option 2 will while productivity remains low and farmers’ poverty level remains high. The Government needs to choose the option that is consistent with its implicit welfare function.

5.27. On part of the donors and civil society, it is important that the Government be fully supported in its effort to privatize and liberalize the cotton sector. In addition, transparency and
accountability needs to be increased through involving civil society organizations in developing support for change. In addition to undertaking reforms within the marketing and production chains, it is crucial to develop support for reform and change from stakeholders outside of the entrenched system. In this area, active dissemination campaigns need to be carried out in collaboration with civil society organizations such as Action Against Hunger to inform farmers of the costs of distortions. This would help generate a sustained demand for change from the majority of farmers and from agents that do not derive benefits from the status quo.
COTTON PRODUCTION CHAIN IN TAJIKISTAN – PRIOR TO 1991

Soviet Central Planning Authority determined the amount of cotton to be produced in Tajikistan for a given year.

Ministry of Agriculture Tajikistan was provided resources for inputs to cultivate planning cotton including infrastructure services.

Financial resources transferred to AgroProm – agency responsible for allocating money for their capital needs agriculture sector growth and production development.

Raw cotton was delivered to designated ginneries. Ginneries submitted detailed reports that the farm-wise cotton target had been delivered and arranged payment to AgroProm against the farm account. Managers of farms that generally did not meet the target were removed from their posts. Ginneries then transferred cotton fiber to AgroProm for onwards transportation to the Soviet authority.

Local administrative units (Hakumats) were given resources with targets cotton production. Hakumats had estimates of potential cotton yields by each farm (provided by Ministry of Agriculture based on the land quality analysis conducted regularly for each farm). They disaggregated national cotton production targets to each farm under their control and passed these targets to farm managers. Hakumats provided farms inputs through state in/out supply units (khimiya and madat) irrigation and power (Tajik Barki).

Farm managers, nominated by Hakumats and elected by farm workers, utilize the inputs to produce raw cotton. Workers were paid a salary. In addition in kind compensation was provided to farmers in terms of cotton seed oil and cotton stocks for fuel, accommodation, kinder garden for children, and other government supplies including sugar, etc through government managed shops at subsidized prices.
COTTON PRODUCTION AND FINANCING CHAIN IN TAJKISTAN – POST 1996

**Government of Tajikistan**  
Post civil war shortage of finances for cotton cultivation led to dialogue with Paul Rienhart AG. CSFB offered to lend US$ 116 million to Paul Reinhart AG for cotton financing in Tajikistan if the government agreed to provide a sovereign guarantee to CFSB. The government agreed to this.

**Credit Suisse First Boston (CSFB)**  
On the basis of sovereign guarantee of the government of Tajikistan, lends US$ 116 million to Paul Reinhart AG in two tranches, of US$ 78 million and US$ 38 million.

**Paul Rienhart AG**  
After discussion with the government and receipt of financing from CSFB, Paul Rienhart AG on-lends this money to the National Bank of Tajikistan in two tranches, of US$ 78 million and US$ 38 million.  
*Paul Reinhart charges LIBOR + 4%*

**National Bank of Tajikistan (NBT)**  
The government decides that financing to the cotton sector will be provided through the AgroInvest Bank – former AgroProm. Consequently **NBT passes on the loan from Paul Reinhart to AgroInvest at LIBOR + 6%**. Interest is accrued from the date **NBT gives money to**

**AgroInvest**  
AgroInvest engages 16 loan brokers to channel funds to farms. **Finance**

**Local Government (Hakumat)**  
The future contract between farms and loan brokers is witnessed by the Hakumat. The Hakumat provides implicit guarantee that the farm will deliver the contracted amount of cotton to the loan broker, through the ginnery.

**GINS**  
Out of 23 privatized gins in Tajikistan, 5 are directly owned by loan brokers while in the remaining 15 they are directly or indirectly major shareholders.

Gins receive raw cotton from farms and inform the loan brokers accordingly. Loan brokers then deduct the amount of raw cotton delivered by farms from the contract.

**Loan Brokers (Futures Companies)**  
Each of the 16 loan broker is assigned farms in specific areas. Within these assigned areas, farms could only deal with the assigned broker. The broker provides credit to farms in the form of inputs at prices determined by the broker. Once the broker receives the raw cotton, he/she markets it and pays AGROINVEST the loan amount.

**Farms**  
Farm association chairpersons or farm managers (elected by process of nomination by Hakumat) sign “futures contracts” with loan brokers. In return for crop financing, farms commit to deliver certain quantity of raw cotton to gins by a fixed date. Credit is given in the form of crop inputs (seed, fertilizer, fuel, etc.). In case the farm manages to provide more cotton than agreed in the future contract then the broker gives the value (determined by broker, because he/she is also the crop market) to the farm. However, if the farm cannot deliver the contract amount of raw cotton to the gin, then the farm becomes indebted to the loan broker. In addition, the indebtedness of the farm grows over time because the loan broker imposese accrued interest on the
DEPICTION OF DEBT CHAIN IN COTTON PRODUCTION IN TAJIKISTAN

Private financiers led by international syndicate put seed capital to help develop cotton sector. In return farm managers undertook to deliver certain quantities of cotton at a set future price – level and price set in such a way that it benefits the buyer.

Newly established Dekhan Farm Associations formed out of state and collective farms under the land law of 1993 are given about 90% of seed capital instead of 100%.

Individual manager is given seed capital in kind. These inputs are substandard (often expired) and obtained at inflated prices. In addition physical quantities of inputs delivered over declared i.e. on paper 250 units of fertilizer was provided but actual delivery was, say 200 units. Farm managers are made to sign that they received full quantities, 250 units here.

Individual manager signs that he/she received full inputs whereas they received insufficient inputs to grow desired cotton. Knowing target will not be met they then sell a% of inputs to other private cheaply and transfer the rest to farmer. Farmer made to sign he/she received full inputs.

Although farmer made to sign that he/she received 100% of input, he/she actually gets input worth say 50% of requirements.

Lack of adequate input result low crop yields

Manager of farm delivers x amount of cotton to ginnery. According to system if the farm manager cannot attain production target, he/she is replaced in the following year.

Farmer delivers raw cotton, below the target, to farm manager.

Ginners are given amounts of cotton. z is x plus an amount y. Now the farm manager has attained his target production (z) and retains his job. Gives “a little something” to ginner owner to sign on receiving z amount of cotton. Since in actuality the ginner has received x amount, it will only be able to gin cotton consistent with x amount of raw cotton. Ginner claims low ginned cotton output is due to poor quality, evaporation of moisture etc.

Ginners signs that it has received z amount of raw cotton. z is x plus an amount y. Now the farm manager has attained his target production (z) and retains his job. Gives “a little something” to ginner owner to sign on receiving z amount of cotton. Since in actuality the ginner has received x amount, it will only be able to gin cotton consistent with x amount of raw cotton. Ginner claims low ginned cotton output is due to poor quality, evaporation of moisture etc.

Farming manager delivers the ginned cotton to the Farm Association Chairman, who in turn delivers this ginned cotton to syndicate. The quantity is much less than that promised to the internal syndicate, while price is predetermined. Syndicate says that Association did not deliver the promised quantity and hence the Association “owes” to the syndicate the value (price x quantity not delivered). This is put as debt owed by the Association to the syndicate and is broken down to individual farms – depending on how much of the total quantity promised to syndicate was assigned to respective farm. Important to note that even at the lower quantity of cotton delivered to syndicate, the syndicate makes a profit because of the extremely low predetermined purchase price. The syndicate makes a profit and also includes “debt” owed by the association under its assets. Then the cycle begins again with the syndicate providing further seed capital – debts accumulate for farms.
### Quantity of inputs required per hectare of cotton cultivation along with future's and market price of inputs in 2002-2003 cropping season

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity Required (kgs)</th>
<th>Futures’ Price Ranges (US$/kgs)</th>
<th>Market Price (US$/kgs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>low</td>
<td>high</td>
</tr>
<tr>
<td>Diesel</td>
<td>280</td>
<td>298</td>
<td>364</td>
</tr>
<tr>
<td>Lubricants <em>(sundry)</em></td>
<td>8</td>
<td>779</td>
<td>952</td>
</tr>
<tr>
<td>Seed</td>
<td>100</td>
<td>129</td>
<td>157</td>
</tr>
<tr>
<td>Chemical</td>
<td>1 - 3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Seletra <em>(N₂O₅)</em></td>
<td>174</td>
<td>390</td>
<td>476</td>
</tr>
<tr>
<td>Karbomib <em>(N₂O₅)</em></td>
<td>260</td>
<td>149</td>
<td>183</td>
</tr>
<tr>
<td>Superforfat <em>(P₂O₅)</em></td>
<td>642</td>
<td>128</td>
<td>156</td>
</tr>
<tr>
<td>KCL <em>(K₂O)</em></td>
<td>125</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*(−)* Depending on type of chemicals used

Quantity required and market prices are established by the Ministry of Agriculture. Futures prices vary between the ranges shown. In Sughd prices are generally lower than those prevailing in Khatlon.
LIST OF DECREES ISSUED BY THE GOVERNMENT OF TAJIKISTAN ON AGRICULTURE SECTOR REFORMS

1. Decree “On the rational use of irrigated land”;  
3. Resolution “On the simplification of procedure for determination of land share and its registration”;  
4. Resolution “On the simplification of procedure for establish and registration of land use right”;  
5. Resolution “On the issues of State Committee of RT for Land registration”;  
7. Resolution “On the approval of regulation on the procedure for registration and issue of land use certificates, land share certificates and their costs”;  
8. Resolution “On the approval of regulation on the procedure for compensation for losses in agricultural production to land users due to withdrawal of land”;  
9. Resolution “On the approval of regulation for allocation of land for government and public needs”;  
10. Law “On the insertion of amendments into Land Code of RT”;  
11. Resolution “On the insertion of amendments and additions into regulation on the state supervision over the use and preservation of land”;  
12. Law “On the adoption of Land Code of RT”;  
14. Resolution “On the issues of committee for land resources and land registration under Government of RT”;  
15. Forestry Code of RT;  
16. Law “On the power industry”;  
17. Resolution “On the approval of average rates of land tax”;  
18. Tax Code of RT;  
20. Law “On the insertion of amendments and additions into Land Code of RT”;  
21. Instruction on the procedure of legal registration of constructions, buildings and other facilities in cities, rayon centers, villages of RT;  
22. Resolution “On the insertion of amendments and additions into Government resolution #189 dated 19.04.01”;  
23. Resolution “On the insertion of amendments into clause the Government resolution #389 dated 4.09.99”;  
24. Decree “On the implementation of the right to use land”;  
25. Land Code of RT;  
29. Resolution “On the approval of regulation on the state supervision over the use and preservation of land in RT”;  
30. Resolution “On the approval of regulation on the procedure for compensation for losses in agricultural production to land users due to withdrawal of land”;  
31. Law “On Land Registration”;  
32. Resolution “On the adoption of Law “On Land Registration” and putting it in force”;  
34. Resolution “On the allocation of land for tajik national park”;  
35. Resolution “On the adoption of Law “On Land Evaluation” and putting it in force”;  
36. Resolution “On the approval of government accounting of land in the administrative borders of Matcha rayon of Sugd oblast, Rushan rayon of GBAO, Farkhor rayon of Khatlon oblast”;

9 List provided by FAO.
37. Resolution “On the measures for commitment of land suitable for cultivation into agricultural use”;
38. Law “On Land Reform”;
40. Decree “On the insertion of amendments and additions into code for administrative violations”;
41. Law “On the insertion of amendments and additions into Code of RT for administrative violations”;
42. Law “On the insertion of amendments and additions into some legislative acts of RT”;
43. Resolution “On the restructuring of agricultural enterprises and organizations for the period 2002-2005”;
44. Resolution “On the amendment into clause 4 of the resolution of Council of Ministries of RT dated 1.10.93 “On the measures for commitment of land suitable for cultivation into agricultural use”;
45. Decree “On the allocation of 50 000 ha of land for private subsidiary plots of population”;
46. Resolution “On the measures for execution of Presidential decree “On the implementation of the right to use land”;
47. Resolution “On the joining to agreement made between governments of Republic of Tajikistan, Republic of Uzbekistan, Republic of Kazakhstan and Republic of Kirgizstan on the leasing of land between republics”;
48. Resolution “On the insertion of amendments and additions into regulation on the sate committee of RT for land registration, that have been approved by the resolution of government #189 dated 19.04.01;
49. Law “On the production and safe handling of pesticides and agricultural chemicals”;
50. Law “On the insertion of amendments into Tax Code of RT”;
51. Resolution “On the unforced resettlement of population for the period 2003-2007 from mountainous regions that have lack of land to valley that have derelict land”; 
52. Resolution “On the approval of accounting concerning the availability of land and categorize them into type of lands and land users in RT as of 1.01.2003”;
53. Methodical instruction on the conduction of soil judgment and economical evaluation of land in RT;
54. Instruction for determination of damage on arable lands caused by the violation of land legislation of RT by the physical bodies and juridical persons;
55. Law “On the insertion of amendments and additions into Law “On the Land Reform”;
56. Resolution “On the approval of instruction “On the procedure of calculation and payment of land tax”;
58. Law “On the fixation of indexation coefficient of tax rates for land”;
59. Law “On Dekhkon Farms”;
61. Resolution “On the approval of regulation on the procedure of transfer of land fro one category to another and low productive lands into nonproductive category”;
62. Resolution “On the progress of the implementation of Presidential Decree #874 dated 1.12.97 “On the allocation of 25 000 ha of land for private subsidiary plots of population”;
63. Decree “On the restructuring of agricultural enterprises and organizations”;
64. Resolution “On the insertion of amendments into land share certification, approved by the Government Resolution # 244 dated 27.07.98”;
65. Land Code of RT;
66. Resolution “On the approval of regulation on the procedure of registration and issue of certificates for use of land, land share certificates and their costs”;
68. Law “On transport”;
69. Law “On dekhkon farm”;
70. Law “On payment for land”;
KHATLON
Location of ginning facilities and local investment companies in Khatlon

Non-cotton area
"Somoni XXI"
"Tamer"
"Khima"
"Avangard" and "Interpress"
"Somoni XXI" and "Olim Karimzod"
"Pakhtai Danghara"
"Rakhsh"
"Olim Karimzod"

Cotton ginnery
SUGHD

Location of ginning facilities and local investment companies in Sughd province

Cotton ginneries in Khatlon by districts and by firm
- JV "Kabool TT" & "Somon Invest"
- "Export-Import"
- "Olmurod Karimzoda" & JV "Kabool TT"
- "Tojidad" & "Tijarat"
- "Dehghon"
- JV "Kabool TT"
- Non cotton producing districts

↑ Cotton ginnery

The boundaries and names shown on this map do not imply official endorsement.
Regions under Republican Supervision

Location of ginning facilities and local investment companies in RRS province

Cotton gineries in Khatlon RRS by districts and by firm:
- "Anicin Consulting"
- "Khimpi"
- "Maviono Yakubi Charkhi"
- "Pakhtta"
- Non cotton producing districts

The boundaries and names shown on this map do not imply official endorsement.