The objective of this Poverty and Social Impact Analysis (PSIA) was to analyze the poverty impact of cotton farmland privatization, which began in Tajikistan in 1998. Understanding these changes to the structure of the farmland economy is important because of the predominance of the agricultural sector in the economy and its relationship to the population’s welfare. Also agriculture plays a significant role in its ability to reduce the high level of poverty, especially among rural households, in Tajikistan. Unless land privatization—especially in cotton-growing areas—is carried out in such a way as to directly improve farmers’ welfare, its benefits will translate into little real reduction in poverty.

The analysis focused primarily on the income implications of cotton farmland privatization. The privatization process for these lands has diverged the most from true land privatization, which is normally understood to be 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 addressed were

- What has been the impact of cotton farmland privatization on poverty?
- Who currently benefits from cotton production and marketing?
- How can cotton production and marketing be improved to increase productivity and income?
The findings of the report suggest total estimated losses ranging from US$163 million to US$205 million annually, and are the result of the current structure of cotton farmland production, processing, and marketing. These losses (which translate into 10 to 13 percent of GDP) in potential income for farmers have a severe and negative impact on the welfare of farmers and their families, with consequences of high poverty rates and extensive deprivation.

The study’s discussion of the impact of privatization focused primarily on income rather than more broadly on social consequences. The reason for this approach was that privatization did not have a sufficiently long enough track record in Tajikistan to allow for distinguishing the specific social impact of privatization from the other changes that were occurring throughout the country.

COTTON IN TAJIKISTAN: A BRIEF BACKGROUND

The agricultural sector plays a critical role in Tajikistan’s economy even though 93 percent of the land is mountainous. Most of the arable land is concentrated in the Khatlon and Sugd provinces, with limited arable land in the Rayon province under Republican Supervision (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 percent of the country’s total export earnings.

Recent economic growth has resulted in poverty reduction but there has been 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 percent, while poverty rates, measured at US$2.15 per day (at purchasing power parity), have fallen—from 81 percent in 1999 to 64 percent in 2003. However, Tajikistan remains the poorest country in the Central Asia, with a per capita GDP of US$191. Poverty is concentrated in rural areas, where 73 percent of the population resides. About 65 percent of the total population live in Khatlon and Sughd, the two main cotton-growing provinces. These two provinces account for 72 percent of the poor and 75 percent of the extremely poor, as shown in table 13.1. This is an interesting finding: since cotton accounts for about 11 percent of GDP and is the major cash crop, cotton-producing areas would not be expected to be the poorest regions of the country.

Significant liberalization and partial privatization have taken place in the cotton sector since independence, but there are problems with
passing the proceeds through to the farmer. Price distortions as well as institutional setting issues hamper effective pass-through. The ginning subsector 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, but only a minority of them have been privatized.

Most cotton farms were “privatized” by giving collective land tenure rights to farmers. These collective rights have resulted in no significant increase in individual farmers’ authority compared with their authority in Soviet times. State farm restructuring, the main restructuring method that the government has used to “privatize” collective farms, 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 a farmer who declined to participate in the collective receiving land that is noncontiguous and possibly below average in quality; hence few—if any—farmers leave the collective. Farm management has remained in the hands of the same individuals who were managers prior to privatization. Though they are nominally elected by the farmers in the collectives, the key to their authority is the support of local governments.

Financing for the collective cotton farms is provided by loan brokers to farm managers primarily in the form of inputs in kind. The farm manager agrees to deliver a certain quantity of seed cotton in return for the financing. The ginning subsector is controlled principally by input financiers. This subsector acts as a de facto monopsony. The marketing of cotton is mainly carried out by input financiers, as they have the first claim on cotton produced by farms.

Table 13.1 Regional Distribution of the Population, the Poor, and the Extremely Poor, 2003

<table>
<thead>
<tr>
<th>Province</th>
<th>Population</th>
<th>Distribution of the poor</th>
<th>Percent of population living in poverty</th>
</tr>
</thead>
<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>

Note: The poverty lines have been adjusted for regional prices differences.
The World Bank has implemented a Farm Privatization Support Project (FPSP) whereby 10 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 along with seed capital grants. Under this 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.

Lint cotton production has fallen from its 1990s level, although there has been some improvement since 1999. This is primarily because seed cotton production has fallen, and lint conversion rates have dropped. The area under cultivation has remained fairly constant, although seed cotton yields have fallen by 32 percent during 1990–2003, going from about 2.8 to about 1.9 tons per hectare, as shown in figure 13.1. The major reasons for this fall in yield are (1) the poor quality of inputs, which is a result of the lack of an efficient crop-financing mechanism; (2) inefficiencies in the ginning subsector; (3) problems with the marketing of cotton; and (4) the lack of effective privatization of the factors of production.

Twin issues of vital importance confronting policy makers are how to improve productivity in the cotton sector and how to pursue privatization of cotton farmlands. These are two key objectives stated in the Tajikistan Poverty Reduction Strategy Paper (PRSP).
OBJECTIVE AND IMPLEMENTATION OF THE PSIA

The principal objective of this PSIA was to analyze the poverty impact of the privatization of cotton farmlands. The work sought to address three key questions:

- What was the impact of cotton farmland privatization on cotton production and marketing chains, in terms of prices and institutional arrangements and hence on poverty?
- Who benefited from cotton production and marketing?
- How can cotton production and marketing be improved to increase productivity and income?

The study endeavored to answer these questions by analyzing the poverty impact of cotton farmland privatization by different methods deployed in Tajikistan. The two methods were State Farm Restructuring (SFR) and the World Bank Farm Privatization Support Project (FPSP). In addition, the IFC had implemented the Farmers’ Ownership Model (FOM), which provided financing to restructured and privatized farms. The main focus of the study was on access to land, crop choice, and the participation of farmers in the financial affairs of farms.

The study analyzed the cotton production and marketing chains and the distortions that existed within them. Where possible, these distortions were quantified. In addition, a stakeholder analysis was carried out to assess the incentives and relative importance of each stakeholder in the privatization process. Within this context, a gin zoning map was formulated for each cotton-producing rayon, showing the location of gins in the cotton-production areas along with the main loan brokers operating in that area.

Building on the discussion, we assessed the welfare impact of the inefficiencies in the cotton production and marketing chains. The analysis focused on the economy as a whole as well as on the welfare (as measured by income) of farmers.

The analysis provided some policy advice, with a rationale, for addressing the major issues with the aim of improving the welfare of the farmers and reducing poverty in Tajikistan.

It is important to state why the focus of this study was on only cotton farmlands. First, cotton farmlands make up three-fourths of total farmlands. Second, noncotton farmland privatization took place in a framework that provided farmers with full appropriative rights on lands. The Land Code was silent on the issue of renting and leasing of land; this practice was ongoing but informal for agricultural land. However, local governments
were (and, as this chapter goes to print, they currently remain) at liberty to interpret the Land Code to determine whether land could be rented or not. There were no bottlenecks or impediments to the privatization of these lands. For most noncotton farms, the government gave inheritable but not tradable land use certificates to individual farmers. In addition, noncotton farms grow noncash crops and therefore have not attracted the rent-seeking vested interests that have affected the cotton sector.

**METHODOLOGY OF THE ANALYSIS**

The methodology adopted in this report included

- a partial equilibrium analysis on the impact of different farmland privatization methods on the incomes and welfare of farmers,
- a stakeholder analysis of the cotton sector in order to determine the incentive structures of various players and their control over the privatization process, and
- quantification of the costs of distortions and inefficiencies within the cotton production and marketing chains.

In deciding on the methodological approach for the PSIA, consideration was given to the following points:

- The importance of indirect impacts: The net effect of the privatization process would be transmitted mainly through two channels. The first channel would be the impact of privatization on farmers’ incomes and welfare through asset endowments and changes in institutional arrangements. The second channel would be the overall impact on the economy of such privatization and the government’s fiscal position that resulted from the change in cotton yields. In addition, the privatization process would alter the incentive structures of major stakeholders who control, either notionally or effectively, the different factors of production in the cotton sector.

- The availability of data: The primary source of data for quantitative analysis was the Tajikistan Living Standard Survey 2003. The problem here was that, from the dataset, it is not possible to distinguish clearly between cotton and noncotton farmers. There were only 79 households within the dataset that grew cotton, out of 1,572 rural agriculture households. These observations were insufficient for conducting robust quantitative analysis. However, significant statistical time-series data were available on seed cotton production and marketing by provinces. These data were supplemented by rich qualitative information that was available on the marketing and distribution chains.
Time and resource availability: Privatization of cotton-growing farmlands was ongoing at the time when this study was being conducted. There was no track record to make a comprehensive comparison of the differences in outcomes between state farms and restructured farms. Furthermore, an agricultural survey did not exist.

Local capacity: There were significant numbers of donors, civil society organizations, and international organizations involved in the cotton sector reform program in Tajikistan. These stakeholders also provided significant information for this study.

**WHY PRIVATIZE FARMLANDS?**

The primary reason for privatizing state and collective farms was to improve their productivity and to increase the incomes of farmers. Higher productivity (yields) would create a virtuous cycle of sustainable growth and poverty reduction.

Figure 13.2 shows that that most seed cotton cultivation takes place in the Khatlon and Sughd provinces, where 78 percent of the extremely

![FIGURE 13.2 Area Under Cultivation, by Province, 1997–2003](image-url)
poor people live. Seed cotton yields have been increasing since 2000, but they remain significantly lower than their 1990 levels. In 2003 seed cotton yields were 1.9 tons per hectare, 32 percent lower than the 2.8 tons per hectare in 1990.

Lower yields represent direct losses to the country and to farmers in particular, in terms of income forgone. Analysis suggests that if seed cotton yields could be increased from 1.9 tons per hectare back up to 2.8 tons per hectare, Tajikistan would earn an additional US$100 million per year.

ALTERNATIVE FARM PRIVATIZATION METHODS

The process of privatizing cotton farmlands began in 1996. At that time there were 668 state and collective farms (sovkhozes and kolkhozes) and 168 seed and animal pedigree research farms. These farmlands were located primarily in the irrigated zone of Khatlon and Sughd and in RRS. After independence, Tajikistan opted to transform itself 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 toward the market economy.

From 1997 onward 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 percent of all state and collective farms have to date been privatized. The majority of the remaining 27 percent of farmlands grow cotton; these remain state owned, collective farms. Privatization of cotton farmlands to date has used two methods: state farm restructuring (SFR) and the method used by the Bank’s Farm Privatization Support Project (FPSP). These methods are described below. It is important to note that in Tajikistan the land is owned by the government, but its use right is vested with the Tajik citizen, family, individual, or group of individuals. The land use right is inheritable but this right cannot be rented, leased, transferred to nonfamily members, mortgaged, or sold. The land use right is registered and is backed by the government.

State Farm Restructuring

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 this meeting, farm members are informed of the government’s decision to transform the collective farm into dekhan farms (in Tajik, the word dekhan literally means peasant or worker farms). The local government proposes a farm manager for each dekhan farm and asks 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 specify criteria. 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 by a simple majority at the annual general meeting.

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 issues a land use certificate to each dekhan 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 dekhan 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. What does change is the responsibility for the delivery of social services. The restructuring process also means that the social services supported by the original state farm (for example, kindergartens, schools, and hospitals) are transferred to their parent ministries.

**Farm Privatization Support Project**

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 10 farms covering an area of 17,000 hectares were privatized. Of these 10 farms, 8 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 used a four-step approach to privatization. First, farms were divided into their constituent brigades and per capita land was divided among farmers by lottery. Inher-itable but not tradable land use certificates were provided by the state land committee to individual farmers, reflecting the allocation of lands. Second, water user associations were formed and intra-farm water distribution infrastructure was rehabilitated. This would ensure a community-managed water provision system, a water charge collection mechanism, and maintenance of the intra-farm water distribution system. Third, a grant of US$300 per hectare was provided by the project to farmers to obtain crop inputs or any farm needs to start farming as an independent family farmer. Fourth, technical assistance in growing cotton independently was provided to farmers by using demonstration plots. These were 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 step 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).

**Cotton Financing and Marketing under the IFC 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 by producing a land use certificate is required by the IFC.

SAS provides financing to members for crop inputs at commercial terms and uses future cotton crops as collateral. These loans can be repaid to SAS in cash or as raw cotton. In addition to providing crop financing, SAS provides technical assistance to farmers by 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. Farms under SAS have shown increased productivity of seed cotton.
IMPACT ANALYSIS OF INDIVIDUAL AND COLLECTIVE LAND TENURE

We now compare incentive structures, land ownership, financial management, and income generation and sharing for farmers under each privatization method.

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; 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 both forms of land tenure and usage rights. This pivotal difference results in remarkably different intra-farm incentive structures, as can be seen in the comparison set out in table 13.2, which compares the differential impacts of individual land tenure and collective land tenure on the incentives for and incomes of farmers.

Table 13.2 Comparison of the Impacts of Individual and Collective Land Tenure

<table>
<thead>
<tr>
<th>Impact on</th>
<th>FPSP—Individual land tenure</th>
<th>SFR—collective land tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to land and asset endowment</td>
<td>Individual inheritable and nontradable rights that can be revoked only by “irrational” use of land. The law does not define rational use.</td>
<td>The land is managed by farm managers. There is no clear demarcation of physical location of land for each farmer. The law is not clear on procedures on separation from collective. The farm manager has the latitude to exclude and include members.</td>
</tr>
<tr>
<td>Wealth</td>
<td>Positive impact on assets and hence on wealth, as farmer has clearly demarcated land which increases potential income as well as generating a positive net present value.</td>
<td>The farmer does not have clear title to demarcated land, hence any calculation of income or net worth is not possible.</td>
</tr>
<tr>
<td>Empowerment</td>
<td>Within boundaries of “rationality” the farmer can choose the crop—albeit tacit pressure from local governments remains on the farmer to grow cotton.</td>
<td>The farm manager makes all decisions on behalf of the farm and pays a wage to workers. Wage reflects employment rather than ownership.</td>
</tr>
</tbody>
</table>

(continued)
Table 13.2 Comparison of the Impacts of Individual and Collective Land Tenure (Continued)

<table>
<thead>
<tr>
<th>Impact</th>
<th>FPSP—Individual land tenure</th>
<th>SFR—collective land tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income generation and price changes</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>The 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.</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 rules.</td>
</tr>
<tr>
<td>Risk exposure and mitigation</td>
<td>The farmer has more control over cropping decisions.</td>
<td>Farms under kolkhozes tended to over grow cotton and not rotate adequately. As a result yields fell and farms had to cultivate yet more area under cotton to meet production targets. Restructuring does not change the way farms are managed or run from earlier times.</td>
</tr>
<tr>
<td>Cotton picking incentive and quality of cotton.</td>
<td>Pass-through of cotton proceeds to the farmer is direct. He or she receives higher prices if cotton is of better quality, hence the incentive to pick with care is greater.</td>
<td>Farmers (pickers) are paid per kilogram irrespective of the quality of picked cotton, therefore the incentive to pick with care is not as direct.</td>
</tr>
<tr>
<td>Experience with dealing with all aspects of the production and marketing chains.</td>
<td>The farmer will require training, demonstration, and support to farm independently.</td>
<td>Production will continue as before and no additional training will be required.</td>
</tr>
</tbody>
</table>

*Source: Based on stakeholder analysis by authors, and World Bank staff.*
The comparison between individual and collective land tenure indicates that the farmer’s land access, wealth, income, empowerment, and ability to mitigate risk are more favorable under individual land tenure. It is important to note that the social service delivery (education and health) deteriorated across the board in Tajikistan, both in farms that remained state-owned collective farms and in privatized and restructured farms. Consequently, the welfare of children in particular, but also workers, most likely has worsened. This is the result of general underfunding of social services by the state collective farms or the parent ministries, which is because of their respective weak financial and fiscal situations. Further research at the local level on access to key social services would shed further light on the extent of the deterioration of land access to these services.

COTTON PRODUCTION AND MARKETING, POST-1996

Post independence, the cotton sector production and marketing chain were transformed. Major changes have occurred in financing, in the privatization of gins, and in the liberalization of crop cultivation. These changes are discussed below.

The 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 U.S. dollars. This guarantee was given and financing was provided to the government via the National Bank of Tajikistan, at an interest rate of 10 percent per year. Over time, other foreign financiers entered the arena and some, including Paul Reinhart SA, provided financing directly to loan brokers. Foreign financiers have recently started to provide crop financing directly to local loan brokers. These loan brokers are, in practice, merely local agents for foreign financiers.
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 percent. AgroInvest resolved to engage a group of loan brokers that would deal with farms. This meant that farms were rationed to specific loan brokers. These loan brokers were sole credit providers and worked with the tacit support of local governments, cornering specific cotton-growing areas where farms could liaise only with that broker. The lending rate charged by loan brokers ranged between 19 percent and 25 percent in U.S. dollars. Higher lending rates resulted in higher input costs for the farmer, and hence lower profits. In addition, AgroInvest did not provide guidelines to brokers on interest rates they could charge on loans.

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. If 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.

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 a majority shareholding in another 15. More gins have since been established, bringing the total number of gins currently operating in Tajikistan to 38. Other than the privatization drive, the government has made no change to the tax code that links the local governments’ revenue collection mechanism to cotton processed in gins under their jurisdiction. Local governments derive an important share of their revenue from gins; hence they have an incentive to keep cotton ginning within their region. This aspect of the taxation code effectively zones cotton production to local gins.
Liberalization in Crop Cultivation and State Interference

Between 1996 and 2003, the government issued 71 decrees that provide the legal basis for the agricultural sector reform and the ensuing privatization and farm restructuring carried out to date. One of these decrees also eliminated local government interference in the agricultural sector, although the government maintains its policy of formulating national cotton targets, as was done by the Soviet Union in pre-independence times.

STAKEHOLDER ANALYSIS OF THE COTTON SECTOR

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. A detailed stakeholder analysis was prepared based on interviews of farmers, input financiers, local government officials, and civil society organizations. The aim of this analysis was to determine

- the costs and benefits of privatization for each stakeholder,
- the importance of each stakeholder for the success of privatization, and
- the degree of influence of the stakeholder over the privatization process.

The stakeholder analysis shows that privatization resulting 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 is primarily because these stakeholders are extracting rents from the cotton sector at the expense of farmers. These are the same groups that would favor preserving the status quo.

The stakeholder analysis also shows that the central government would, in principle, 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 thereby improve the fiscal and external positions of the country. 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 understand that privatization and liberalization would have a positive effect on yields and hence on revenues, they will no doubt support the process. The detailed stakeholder analysis matrix is presented here in table 13.3.
Table 13.3 Matrix of 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</th>
<th>Importance</th>
<th>Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central government</td>
<td>• Equitable land distribution</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increase export earnings</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Control over farms</td>
<td>−</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>• Increase in cotton yield</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Higher tax revenue</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduce poverty</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local governments (hakumats)</td>
<td>• Control over farms</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Patronage of farm managers</td>
<td>−</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>• Patronage of gins &amp; loan brokers</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tax revenues</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm association chairperson / dekhan farm manager</td>
<td>• Control over farm</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Patronage of gins &amp; loan brokers</td>
<td>−</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Status in community</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Rents from production chain</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farmers</td>
<td>• Increase in income and welfare</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increase in productivity</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Crop choice freedom</td>
<td>+</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Freedom to procure inputs</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improve gender balance</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Social service previously provided by collective farms</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AgroInvest shareholders</td>
<td>• Profits from financing cotton</td>
<td>−</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Control over cotton sector</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loan brokers (future contractors)</td>
<td>• Profits from input supply due to competition</td>
<td>−</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>• Reduce farm debt stranglehold</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Patronage of farm associations and farm managers</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ginnery owners</td>
<td>• Patronage with local government and loan brokers</td>
<td>−</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>• Forced processing of raw cotton at specified gins</td>
<td>−</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: World Bank staff analysis/estimates.

a. Effect of privatization on interest(s).
1 = Little/No Importance
b. Importance of stakeholder for success of privatization of cotton farmlands.
2 = Some Importance
3 = Moderate Importance
c. Influence of stakeholder over privatization of cotton farmlands.
4 = Very Important
5 = Critical Importance
Following this stakeholder analysis, the PSIA aimed at quantifying the rents being extracted by different stakeholders, as discussed below.

**QUANTIFYING RENTS AND COSTS OF INEFFECTIVENESS**

The cotton sector in Tajikistan is clearly in transition. Some aspects of it are controlled by a small group of private entrepreneurs, working like a cartel. Government is targeting of cotton production, and there are informal means of ensuring that targets are pursued. Such a hybrid system has the potential of creating lopsided incentive structures, because 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.

**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 Asian Development Bank (ADB), total external cotton farm debts stood at US$65 million on January 1, 2004. The principal and interest breakdown 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 13A, and is as follows.

- **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 overpriced. Conservative estimates suggest that inputs were overinvoiced between 10 and 25 percent. Calculations suggest that if inputs were overinvoiced by 10 percent, a sum of US$9 million was extracted annually from the cotton sector. This figure increases to US$21 million per year if inputs were overinvoiced by 25 percent. Taking into account this resource appropriation, the question arises as to why the farm manager accepted overpriced inputs. The answer lies in two key areas:

- A lack of alternative crop financing mechanisms along with pressure from the government to grow cotton meant that farms concluded future contracts with loan brokers, irrespective of the terms of the contract.
The farm manager was elected with the support of local authorities but was not answerable to farmers in any effective sense on farm management issues. By law, the farm manager could borrow in the name of the farm but was not personally liable for repayment. This resulted in imprudent borrowing. In addition, the incentive of sharing “rents” from over invoicing with brokers was strong.

**Delay in input delivery by loan brokers:** The supply of cotton inputs was often significantly delayed, which meant that farms could not start cultivating their cotton on time. Again, the farm had to accept this suboptimal financing arrangement because it was the only source of financing available.

**Poor quality and inadequate quantity of inputs:** Input over invoicing was compounded by inputs of poor quality. 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 to the delivered quantity.

These distortions notwithstanding, the seed cotton quantity that farms contracted to deliver in these future contracts was very optimistic. The 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 price of cotton fell by 50 percent. 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), and previous arrears kept accruing interest. In this way, farms accumulated large debts. The result is that indebted farms became “captive” to the brokers, having 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.

Increasing farm debts translated into nonperforming 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, but the problem of nonperforming domestic loans remained an issue. On December 31, 2003, the government split AgroInvest into two financial
entities: KreditInvest and AgroInvest. All nonperforming 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.

**Effective Cost of Ginning in Tajikistan**

The average nominal cost of ginning cotton in Tajikistan is about US$140 per ton. However, the effective cost of ginning is significantly higher because of higher accrued interest costs for the farm owing to ginning delays, lower ginned cotton outturns, and the deterioration in cotton quality because of gin delays.

Gins have a perverse incentive to delay cotton ginning, which 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 it takes to gin cotton, the longer the time for which interest is charged by the loan broker. Tajik gins take, on the average, 200 days to gin cotton, compared with 110 to 120 days for Western gins. This delay results in the following:

- **Higher accrued interest for the farm.** Typically, loan brokers provide inputs at interest rates in the range of 14–30 percent. Table 13.4 calculates the interest cost to the cotton sector of the additional days required for ginning in Tajikistan. The low-cost scenario is based on an interest rate of 14 percent; the high-cost scenario is based on an interest rate of 30 percent.

- **Reduction in working capital of farms.** In the regular cotton cultivation cycle, farmers plant cotton in April each year and pick the

<table>
<thead>
<tr>
<th>Category of expenses</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input finance per hectare (US$)</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Interest rate</td>
<td>14%</td>
<td>30%</td>
</tr>
<tr>
<td>Interest cost for 110–20 days (average 115 days)</td>
<td>13.2</td>
<td>28.4</td>
</tr>
<tr>
<td>Interest cost for 200 days</td>
<td>23.0</td>
<td>49.3</td>
</tr>
<tr>
<td>Excess interest cost from delays (200 days vs. 115 days)</td>
<td>9.8</td>
<td>21.0</td>
</tr>
<tr>
<td>Number of hectares cultivated in 2003</td>
<td>284,367</td>
<td>284,367</td>
</tr>
<tr>
<td>Total excess interest cost borne by the cotton sector (US$)</td>
<td>2,781,343</td>
<td>5,960,021</td>
</tr>
</tbody>
</table>

*Source: World Bank staff estimates.*
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.

- **Losses due to low gin outturns.** The ginned cotton outturns in Tajikistan range between 24 and 32 percent, compared with an average of 36 percent for Western gins—a difference of 4 to 12 percent. The reasons for the low outturns are many, and include old machinery that is not well maintained; a cotton supply that is captive 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 for gins to compete and improve productivity; and a lack of accountability of the physical cotton received by gins, leading to the theft of cotton by unscrupulous workers. It is estimated that losses due to low cotton outturns, at different outturn levels, could range between US$51 million and US$77 million.

- **Inverse relationship between cotton quality and ginning delays.** Cotton is a delicate and easily degradable commodity. If raw cotton is not ginned within 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 percent after the first 90 days, depending on specific storage conditions. It is difficult to calculate how much it deteriorates, but it is certain that Tajik cotton quality does deteriorate.

The main cause for these problems is the monopsonistic structure of the ginning subsector. 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.
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. It is fundamentally contrary to the stated policy of no interference, and creates gray areas for targeted state interventions.

A scenario analysis carried out by the ADB to assess cotton profitability in Tajikistan shows that Tajikistan would have a comparative advantage in cotton production under a fully liberalized and privatized environment (ADB 2002: 54). This means that, if left to their own devices, farmers are likely to choose to grow cotton under a liberalized environment. However, the research also points out that at present yield levels and distortions, 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 13.1. 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 fulfills four criteria. It enables the quality of the product to be fully described, makes it possible to maintain a high level of integrity of standards that are recognized by the buyer and seller, provides transparency in the operation, and facilitates operation at a reasonable cost.

The international standard of cotton grading is, by default, the U.S. Department of Agriculture (USDA) standard, and is used by major cotton-exporting countries such as Australia. Tajikistan produces less than 1 percent of world cotton production, but it 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. Because gins are owned by loan brokers, the owners have an incentive to tell farms that their cotton is of a lower quality (even if this is not true), so that they can buy it from them at a lower price and 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, adjusting it downward for costs incurred in transportation. A minimum price is fixed 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, a fixed minimum price provides a reference point for farmers to assess the possible profitability of the farm.

The disadvantage is that this system provides cotton at lower, rent-adjusted prices to loan brokers, because rents extracted from cotton production act as a de facto subsidy for the financiers. For agents who are not part of the rent-extraction chain, such as spinning mills or other buyers, the competition becomes unfair because the price paid by loan brokers and foreign financiers (including rents) is lower than the price 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 in this report to establish the level of subsidy thus provided, but the issue needs to be explored further in the context of the comprehensive agricultural sector study.

**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. There are three main issues regarding the numerous decrees and resolutions passed to date.

- **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, some 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.

- **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.

- **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 using such services.

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.

**Total Losses from Inefficiencies and Rent Seeking**

The current distortions represent a cumulative loss to the economy of between US$63 and US$105 million annually. A breakdown of this loss by component is provided in table 13.5.

Inefficiencies in the ginning subsector (in the form of low gin out-turns and higher financial costs) account for the majority of direct losses of earnings in the cotton-growing subsector. However, rents from input finance also cause significant indirect losses. These indirect losses stem from cotton yields that are lower than they would otherwise be. Because of rent-seeking in input finance, seed cotton yields are at 1.9 tons of seed cotton per hectare. If input finance is provided competitively (as is the
case with IFC SAS), yields can be increased to 2.8 tons of seed cotton per hectare.

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 for improving the social and productive infrastructure, the lack of resources translates into a lower quality of health care, low investment in the educational system, and a lack of adequate upgrading of physical infrastructure. Together these gaps constrain economic growth and income generation for all sectors of the economy.

On the farmers’ side, the impact of the loss of these resources means lower incomes and hence lower expenditures. The cotton-growing areas of Tajikistan are home to the highest prevalence of the extremely poor. With resource leakages from 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.

**“Pass-Through” of Cotton Proceeds**

The current organizational setup of farms under the SFR and the distortions prevalent in the cotton production and marketing chains negatively affect the incomes of farmers. Figure 13.3 shows the distribution of

<table>
<thead>
<tr>
<th>Table 13.5 Losses from Inefficiencies and Rent Seeking</th>
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<tbody>
<tr>
<td><strong>Low</strong></td>
</tr>
<tr>
<td>Cumulative loss as percent of GDP</td>
</tr>
<tr>
<td>Cumulative Loss</td>
</tr>
<tr>
<td>Low gin outturns (low 32% to high 24%)</td>
</tr>
<tr>
<td>Financial costs due to long gin processing time (low interest rate 14%, high interest rate 30%)</td>
</tr>
<tr>
<td>Rents from input finance (low 10% over invoicing higher 30%)</td>
</tr>
</tbody>
</table>

*Source:* World Bank staff estimates.

*Note:* Amounts are in millions of U.S. dollars.
cotton proceeds within the production and marketing chains. The notional pass-through bar shows the how proceeds would 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:

- Farmers are not receiving adequate wages. Farmers should notionally receive US$111 per month in terms of wages but effectively are receiving only 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.
- Whereas farms should be making a profit, effectively they are making losses. These losses are adding to farm debts.

**FIGURE 13.3** Distribution of Cotton Proceeds within the Production and Marketing Chains

<table>
<thead>
<tr>
<th>Percent</th>
<th>“Pass-through” of Cotton Proceeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>Wages</td>
</tr>
<tr>
<td>120</td>
<td>Ginning</td>
</tr>
<tr>
<td>100</td>
<td>Profit</td>
</tr>
<tr>
<td>80</td>
<td>Taxes</td>
</tr>
<tr>
<td>60</td>
<td>Interest</td>
</tr>
<tr>
<td>40</td>
<td>Export costs</td>
</tr>
<tr>
<td>20</td>
<td>Inputs</td>
</tr>
</tbody>
</table>

Source: Based on data from the Ministry of Agriculture of Tajikistan and World Bank estimates.
Proceeds that should be going toward wages and farm profits are being absorbed by loan financiers and in the cost of ginning. Effective costs are higher because of rent seeking and inefficient ginning processes.

The bar on the right labeled “higher yields” shows the projected impact of privatization and liberalization. With the same level of input 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.

IMPACT OF RESTRUCTURING 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.

Labor Migration

The pass-through analysis shows that currently farmers are not 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 laborers. Their womenfolk are left behind to work on the cotton farms so that families can maintain their membership in farms, and hence their future claims on land.

From estimates carried out by the International Organization for Migration (IOM), Tajikistan officially has 600,000 migrants in Former Soviet Union (FSU) countries; 40.8 percent of them are from Khatlon (IOM 2003: 32). Migration has had both positive and negative effects 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. During cotton picking season children are mandated to pick cotton. During this time schools remain closed (schools in Tajikistan are closed for two months longer than those
of other countries). The second-order impact of these issues need to be further studied.

**Access to Education and Health Care**

The farm restructuring process and the subsequent transfer of schools and kindergartens from the farm to the relevant 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 resulting from distortions translates into public social services forgone. Improved services could be provided by the government if the distortions are addressed, thereby providing more resources to the budget.

**IMPACT OF PRIVATIZATION ON DISTORTIONS**

Privatization in itself does not address the other distortions within the input finance and ginning subsector. It is thus important for the privatization to move hand in hand with the liberalization of the sector. The next section presents some options that can be taken by government. Privatization along with liberalization would allow farmers to choose what crop to plant and to control financial decisions pertaining to their lands. Liberalization measures dealing with problems in input finance and inefficiencies in the ginning sector would allow alternative crop financing mechanisms to develop and would improve gin efficiency by instilling competition within the subsector. These measures would lead to higher yields, higher incomes, and a reduction in poverty.

Based on the preceding analysis, two policy options, along with their costs and benefits, were presented. For each option, the feasibility and complementary policies that would be needed are discussed.

**Option 1**

Option 1 is to privatize all cotton farms on the lines of FPSP while leaving other aspects of the cotton production and marketing chains unaltered.

- **Impact.** Farmers would be assured land tenure and have proprietary rights over their land, thereby improving farmer welfare and
increasing incentives for farmers to enhance productivity. The control of farm managers would diminish. Cotton yields would improve, as farmers would 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 would remain, the proceeds from cotton cultivation would continue to be lower because the quality of ginned cotton would be lower and marketing would be carried out monopsonistically.

- **Beneficiaries:** The clear beneficiaries would be farmers, who would have higher incomes and access to land. The government would also benefit from enhanced revenue collection from cotton taxes and higher export earnings.

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

- **Feasibility and complementary policies.** 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 cotton production. However, this option is not the best solution because (1) it does not address the distortions within the ginning and marketing chains that are vital elements of the cotton value chains, and (2) rent capture would only shift from input suppliers to gin owners and cotton marketers.

  A complementary policy would need to ensure that land tenure is not revocable. This would assist in effective collateralization of land and development of the financial sector. In the case of Option 1, the government would need to ensure that the social services previously provided by the collective farms and transferred to the state at privatization are run efficiently. Because higher yields would translate into enhanced revenue to government, there would be some fiscal space to increase spending on social services.

**Option 2**

Option 2 is to privatize all cotton farms on the lines of the FPSP and also to liberalize the production and marketing chains. The liberalization measures and their rationales are reviewed below.
Barring the Supply of Inputs in Kind and Developing Alternative Crop Financing Mechanisms

The practice of supplying inputs in kind should be stopped. Efforts should also be made to develop alternative crop financing mechanisms such as the SAS. 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.

The IFC SAS provides a very robust control check for the above assertion. As presented earlier, 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 percent for members of SAS and 16 percent for nonmembers. SAS allows farmers to repay loans in cotton or cash and assists in marketing 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 earlier. In Sughd Province, SAS farmers have registered average yields of 2.5 tons of raw cotton per hectare, while non-SAS restructured farms are registering yields of about 1.9 tons 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.

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 would go a long way toward introducing transparency into the current system.

At the same time, the farm privatization effort should facilitate the formation of family farms that are large enough to be able to borrow resources from private sources effectively, provided that they are not taxed or overindebted. The study of the optimal size for a family farm and the development of alternative crop financing mechanisms needs to be further explored. The government decree of noninterference in farm cropping decisions should be enforced.
Scrutinizing Farm Debts

Farm debts need careful scrutiny and the issue should be addressed within a comprehensive cotton sector liberalization program. It is crucial that farm debts not recur. The treatment of farm debts is important for the privatization process. Box 13.1 presents a discussion of how this issue can be resolved.

In both options presented, the government must play a key role in terms of the privatization and the liberalization of the cotton

### Box 13.1 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 that:

- the principal and interest breakdown is not known,
- the data collection methodology is not clear, and
- discrepancies and inconsistencies exist among National Bank database, AgroInvest, and loan financiers.

The first step in devising a debt-resolution policy is to establish the magnitude of the debt. 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. 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 two main options:

1. The government can 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 in order for farms to increase their productivity and become able to repay their debts. Here it is crucial to know that even in the low distortions case, a total debt of US$65 million is lower than the amount lost each year due to inefficiencies.

2. The government can suspend further accumulation of debt on arrears outstanding, and can distribute the principal component of debt to farms and declare a moratorium on repayment of the principal for a fixed time period. The government would then privatize farms and build into the privatization process a clause saying that farmers have to repay principal amounts within 2 years of the end of the moratorium. Failure to pay would result in the accumulation of interest at market rates with the possibility of land tenure rights being revoked. The government, local loan brokers, and international financiers would each write off one-third of the amount of the interest incurred.

**Source:** Data from ADB report (listed in references), and World Bank staff analysis.
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.

**Severing the Link Between Cotton Taxation and Gin Location**

The link between cotton taxation and gin location needs to be severed. 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 as discussed earlier. By providing a captive cotton supply, local governments impede competition between gins and leave farmers with little or no room to bargain with gins to provide incentives to improve their efficiency. 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 would go a long way toward instituting competition between gins.

The functioning of the current cotton taxation system needs to be reviewed systematically with respect to (1) revenue sharing between the central government and local governments, (2) the effective tax rate, and (3) 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, thus preventing unscrupulous local government officials from taking advantage of uninformed farmers.

**Phasing Out Cotton Crop Production Targets**

Cotton crop production targets set by the government need to be phased out. By decree, the central government 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 was 610,000 tons
of raw cotton). Central and local government budgets are based on this target, which is very optimistic. These indicative targets are distributed through the governance structures down to the local government level. Government officials, who have 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 or 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 the fertility of the land.

**Implementing an Integrated Cotton Development Program**

The government should implement an integrated cotton development program. In the current cotton marketing and distribution set-up, 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 undergrade the cotton; gins buy the undergraded 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. The main issues involved in maintaining Tajik specific standards are that

- foreign buyers will be unsure about the quality of Tajik cotton and will be deterred from buying cotton from Tajikistan; and
- 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 and contacts in the cotton trade chain, and that 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.
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 along with 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 would increase competition, which would translate into higher prices for farms. This entire issue has to be holistically considered in the context of scaling up farm privatization in Tajikistan.

Impact: Option 2 will increase seed cotton yields most and ensure that farmers receive an adequate share of cotton proceeds while other agents also receive adequate compensation for economic service provided. Higher yields and incomes for farmers will help stimulate the economy.

Beneficiaries: The principle beneficiaries under Option 2 would be farmers. Second-order benefits from multiplier effects of higher spending would be spread across the economy. The government budget fiscal and external positions would improve as a result of higher yields and stimulus to the economy.

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

Feasibility: In terms of equity and efficiency, Option 2 is the most feasible for stimulating the agricultural sector and reducing poverty. Implementing policies that affect entrenched rent-seeking stakeholders would require significant determination by the government. However, there are clear and present benefits of privatization and liberalization of the cotton sector. In addition, partial privatization is no better than no privatization.

A QUESTION OF TRADEOFFS

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. These two options would each have a different impact on cotton sector productivity and income distribution.

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

Alternatively, the government could choose to adopt a comprehensive privatization and liberalization program that would improve productivity and incomes for farmers and the country as a whole (Option 2), while eliminating distortions and rent seekers from the sector. It could also choose to adopt a privatization program that would preserve the vested interests in the cotton production and marketing chains while providing greater control of land use rights to the farmer (Option 1). Both these options would be an improvement over the status quo. However, Option 2 would be most effective in alleviating the problems with the cotton sector 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.

It is important that the government be fully supported by donors and civil society in its effort to privatize and liberalize the cotton sector. In addition, transparency and accountability needs to be increased by involving civil society organizations in developing support for change. Besides 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. To this end, active dissemination and information campaigns need to be carried out in collaboration with civil society organizations such as Action Against Hunger—an international NGO the purpose of which is to reduce hunger and malnutrition—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.

THE IMPACT OF THE PSIA

Though the PSIA was completed only recently and the full impact of the work cannot be determined at this early stage, some early and important contributions are already known. These are:
Identification of the main sources of distortions in the cotton production and marketing chains is essential. The PSIA identified the main impediments to improving the welfare of cotton farmers. By focusing on the multiple players and incentive structure, the report identified which aspects of the sector would need to be reformed to obtain the desired decline in poverty.

Quantification of losses is another essential step. Though it was apparent even prior to the PSIA that the current set-up of the cotton sector was distortionary, the magnitude of the losses resulting from them were not apparent. The PSIA’s major contribution was in identifying the main sources of distortion, quantifying the large losses in this sector, estimating their impact on farmers’ incomes, and highlighting the opportunity cost to Tajikistan.

Provision of policy alternatives for addressing the distortions is the final major lesson from this PSIA. In addition to the quantification of welfare losses, the PSIA has provided a menu of reform options and identified the winners and losers among them. The PSIA estimated the impact of different reform measures, including the cost of no reform. If the government decides to reform the cotton sector, the findings of the PSIA provide advice on the key distortions that need to be eliminated to obtain a supply response.

LESSONS LEARNED

Some of the key lessons learned from this work are:

- A PSIA provides a unique vehicle for understanding stakeholder incentives to raising barriers to welfare improvements—something that poverty assessments and sector-level analyses rarely address or capture well. Stakeholder analysis provides a good instrument for structuring the multiple factors that lead to the observed outcome (in our case, high poverty in cotton areas). It can also extend this analysis further to determine the extent of profits (or rents) captured by various groups, a determination that is useful for understanding the degree of resistance that would exist to implement change.

- The approach that is adopted to carry out the analysis is critical to its success, especially in the manner the team is structured. Team composition and interaction with stakeholders is critical to understanding the manifold facets of an issue that has its roots in both the political and economic arenas. The team working on this PSIA benefited from
being multidisciplinary and having an in-depth knowledge of the culture, the political players, and the agricultural sector.

Consultation with civil society organizations throughout the process is necessary on two grounds: (1) these organizations are a source of information on on-the-ground realities, and (2) they can build a constituency for reforms. The most affected stakeholders in Tajikistan are the farmers. They are dispersed and do not have a unified bargaining platform. This role is, by proxy, played by civil society organizations such as Action Against Hunger, CARE International, and so on.

NOTES

1. Other team members included Bobojon Yatimov, Jeren Kabaeva, and Jossy Moeis.
2. 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 carried out, so the land becomes depleted, leading to a fall in its productivity.
3. Other donors are involved in supporting the government in the rural sector, but not in the process of cotton farmland privatization.
4. In the present situation, land can be rented but cannot be traded or transferred to nonfamily members. This impedes the collateralization of land.

REFERENCES

Depiction of Debt Chain in Cotton Production in Tajikistan
Private financiers led by the international syndicate put seed capital to help develop the cotton sector. In return, farm managers undertake to deliver certain quantities of cotton at a set future price. The level and price are set in such a way that it benefits the buyer.

Newly established *dekan* farm associations formed out of state and collective farms under the land law of 1993 are given about 90 percent of seed capital instead of 100 percent.

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 are overdeclared—for example, on paper 250 units of fertilizer were provided but actual delivery was, say 200 units. Farm managers are made to sign that they received the full quantity stated on paper—250 units in this example.

Ginned cotton based on the $x$ amount delivered by the ginner manager is handed over to the farm manager after he or she has taken clearance of local district, municipality, local police, and so on. Theses clearances are required by law. ONLY the farm manager can bring raw cotton to ginnery.

Although the farmer is made to sign that he or she received 100 percent of input, he or she actually gets input worth say 50 percent of requirements.

Lack of adequate input results in low crop yields.

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

The farmer delivers raw cotton, below the target, to the farm manager.

Farm manager delivers the ginned cotton to the Farm Association chairman, who in turn delivers this ginned cotton to the syndicate. The quantity is much less than promised to the international syndicate, while price is predetermined. The syndicate says that the Association did not deliver the promised quantity and hence the Association "owes" to the syndicate the value of the "missing" cotton (price $x$ quantity not delivered). This is considered a debt owed by the Association to the syndicate and is broken down into individual farm debts, depending on how much of the total quantity promised to the syndicate was assigned to each respective farm. 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 in this way.**