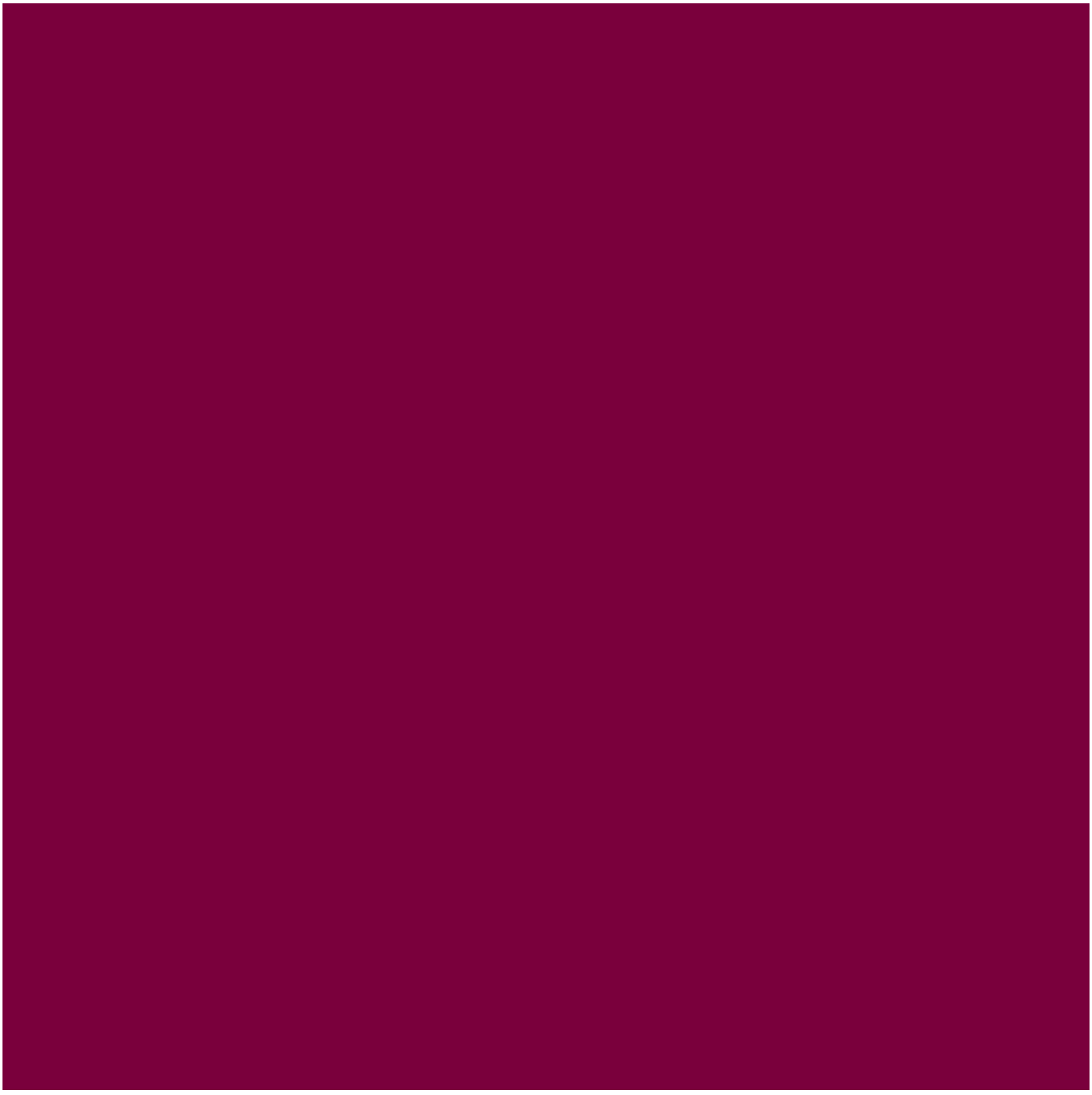
MAY 2007 • ILHOM AKOBIRSHOEV, JESSICA ANDERSSON,
PER RONNÅS AND ÖRJAN SJÖBERG

Country Economic Report 2007:2

Making Pro-poor Growth in Tajikistan Sustainable

An Integrated Economic Analysis Approach



Foreword

This country economic report explores the main challenges and opportunities for making pro-poor growth in Tajikistan sustainable. The study is based on a conviction that the poverty reducing impact of growth depends on the ability of the poor themselves to participate in the creation of growth and on the assumption that improved employment and income opportunities for people living in poverty provide the main avenue for reducing material poverty. Hence, the role of poor people as economic actors and the constraints they face in pursuing this role is in the focus of the study, which applies an integrated approach to economic analysis by linking employment analysis with analyses of the business environment and of the macroeconomic situation.

The study is undertaken against the backdrop of the dramatic transformation of the Tajik economy and society since independence in 1991. The challenge of making better and more sustainable use of the country's rich human and natural resources are very much in the focus of the analysis. Tajikistan stands out as one of the countries with the highest rates of overseas labour migration the world. It is also a country with rich natural resources, but with a poor record of harnessing these resources in a sustainable manner. To capture these aspects, which have profound implications for livelihoods as well as for the prospects for sustainable economic development overall, overseas labour migration as well as environmental aspects are integrated into the methodological framework and given prominence in the analysis.

The study is part of a series of country studies, undertaken by Sida in collaboration with academic institutions and scholars. The main purpose of these studies is to make a contribution to the generation of knowledge and understanding of current economic development challenges in Sweden's main partner countries for development cooperation and feed into national and international debate on these issues.

Per Ronnås
Chief Economist

Published by Sida 2007
Department for Policy and Methodology
Authors: Ilhom Akobirshoev, Jessica Andersson, Per Ronnås and Örjan Sjöberg
Printed by Edita Communication, 2007
Art. no.: SIDA37166en
ISBN 91-586-8050-0
ISSN 1404-031X
This publication can be downloaded/ordered from www.sida.se/publications

Contents

Executive summary

Tajikistan has by any account made quite a comeback after years of civil strife. Over the past decade, the contraction of the economy under the double burden of conflict and the collapse of the Soviet system of central planning has been brought to a halt and reversed. Instead, political conditions have stabilised and peace and policy combined have been instrumental in providing a setting that has been conducive to development. For a while, during the opening years of the new millennium GDP growth exceeded ten per cent per year. Although growth has since slowed down somewhat, it remains respectable, while income poverty has been reduced substantially from the exceedingly high levels registered in the late 1990s. In addition to macro-economic stability, the sources of this growth includes the reallocation of resources from low to high productivity areas. Similarly, forced migration and internal displacement have given way to more orderly labour migration to other parts of CIS, in the process generating sizeable incomes for Tajikistan and its citizens in the form of remittances.

Still, Tajikistan faces major challenges ahead.

- The high rates of economic growth in the past few years have been largely triggered by *one-time discrete events* (such as the peace dividend, establishment of macro-economic stability and a rapid increase in remittances mentioned above). Once the positive impact of these events has been exploited growth may fall.
- There remains a large mismatch between the human resource base (both quantitatively and qualitatively) and the size of the economy. The domestic economy is still far too small to make full and productive use of the labour force, as evidenced by low level of labour productivity and large scale labour migration abroad. The economy is also still too small to allow for the investments in human capital needed to sustain a high quality of the human resource base.
- Economic growth will be illusory and unsustainable if it continues to be based on an inappropriate handling of the natural resources, such as soil and water resources, that underpins an important part of the economy.
- Future growth will primarily have to be based on productivity gains, which in their turn will have to be based on investments, technological development and institutional change. The current levels of savings and domestic investments are far too modest to sustain high rates of economic growth in the future.

– Economic growth has so far primarily been concentrated to the services sectors. Manufacturing, in particular, but also agriculture will have to play a more prominent role in the economic development in coming years, for growth to become sustainable.
– The rapid increase in remittances is mirrored by a similarly high rate of growth of import of consumer goods. This results in low multiplier effects in the economy and suggests a lack of supply response to increases in demand following the inflow of remittances.

The rapid increase in remittances has been instrumental for bringing Tajikistan out of an economic depression and for reducing the demand constraint on growth. Today, the main constraints on growth have to do with a poor supply response rather than sluggish demand. This is partly explained by institutional restrictions in the agricultural sector and the business environment as well as a low propensity to invest, as will be further discussed below.

Integration with the Russian labour market
Some 600,000–800,000 Tajiks are working abroad, primarily in Russia, out of a total labour force of approximately three million. The repatriated earnings of migrant workers are estimated to amount to 800 – 1,000 million USD annually; a truly massive amount for a country with a GDP of merely 2,500 million USD. Indeed, rough calculations suggest that the Tajik labour force contributes more in absolute values to the GDP of Russia than to that of Tajikistan. The aggregate cost (born by the migrant households) of investing in going abroad in the hope of more remunerative work are approximately a quarter of a million USD per year or 10 per cent of Tajikistan's GDP, to be compared with total domestic private investments of no more than 138 million USD in 2005. Much of the labour migration has been and is irregular in the sense that the migrants lack proper documentation and permits. However, recently Russia has given Tajikistan a quota of 600,000 migrant worker permits in an effort to regularise the migration. It is clear that the Tajik labour market is increasingly being integrated with the Russian labour market and that this will have major implications for the Tajik economy and labour market in the years to come.

– In the absence of an adequate supply response in the Tajik economy, remittances are a source of inflation. They also exert an upward pressure on the exchange rate.
– Labour migration results in brain drain. Tajikistan's human capital resources, in terms of education and skills, is being rapidly eroded as a consequence of the decline of the educational system since independence on the one hand and the loss of human capital through migration on the other hand. At the same time there is arguably also a certain "brain gain" as migrants return with new skills, knowledge and contacts.
– Labour migration entails very high social costs, as families are split for long periods of time and women and children have to assume additional economic and household roles. The number of permanently incomplete households also increases as some migrants fail to return. Furthermore, the incidence of sexually transmitted diseases is increasing as a consequence of the migration, having large implications for especially poor rural women.
– The high labour burden put on women and children while men are away reduces households' ability to maintain productive assets such as

land, soil, common property and infrastructure such as irrigation systems, having both short and long term implications especially on agricultural productivity. It also reduces the ability to send children, often girls, to school diminishing their future ability to escape poverty.

– As the Tajik labour market becomes increasingly integrated with the Russian labour market, there will be a sustained upward pressure on wage levels in Tajikistan, triggered by increasing skill shortages as well as by an increasingly high reservation wage, further spurring inflation.
– The international competitiveness of the Tajik economy is likely to suffer as a result of the erosion of the human and natural capital, an upward pressure on the exchange rate and a narrowing of the wage gap between Tajikistan and Russia. This underscores the need for sustained high rates of productivity increases in the Tajik economy, which in its turn puts the need for investments in focus.

The need for high rates of investments

The factors that have triggered growth over the past few years, discussed above, will gradually weaken in the years to come. Sustainable and rapid growth will require much higher investments in a broad spectrum of areas.

Public infrastructure investments are rapidly picking up, largely thanks to ODA and investments from overseas. While these investments are welcome and very much needed, they will not by themselves neither generate growth nor automatically result in growth.

Much higher rates of investment are needed in education and health in order to reverse the erosion since independence of the human capital base from the comparatively high levels attained during the times of the Soviet Union. The increasing integration of the Tajik labour market with that of Russia further underscores the need for sharply increased levels of investment in human capital.

The Soviet Union left behind a legacy of abuse of the country's natural resources and a neglect of the environmental consequences of development. While improvements have been registered in some areas since independence, that is, when it comes to air pollution, the situation in other areas, notably in the fields of soil erosion and water has continued to deteriorate to the point where it in many areas have become acute. Large investments combined with institutional and fiscal reforms in water management and to combat soil erosion are needed to reverse the secular negative trends in these areas and to make future economic development environmentally sustainable.

Private sector investments need to increase substantially across the board. This, in its turn requires a focus on improving the business environment; on creating more conducive conditions for entrepreneurs and enterprises, large and small, in all sectors of the economy.

Binding constraints for pro-poor growth

The present dynamic economic development, the release of previous demand constraints on growth as well as the establishment of peace and security and macro-economic stability offer a possibility and a momentum for shifting the focus from solving short term problems and from crisis management to more strategic planning aimed at laying the foundations for high and sustainable pro-poor growth. To this end, a bundle of binding constraints of both immediate and longer term nature must be addressed. The present study results in the identification of two acute binding constraints, related to the establishment of (i) a sound basis for

market oriented agriculture and (ii) an enabling environment for non-farm private sector development, and three binding constraints of a more long term nature, which while not necessarily acute today still needs to be addressed now in order to prevent them from becoming severe binding constraints in the years to come. These are (i) investments in human capital formation, (ii) reversing the trend of erosion of natural resources and environmental deterioration, and (iii) preventing inter-generational poverty

The need to establish a sound basis for a market oriented and dynamic agriculture. The critical situation in agriculture is well-documented as are its causes.[1] The land reform has suffered from ambivalence and a reluctance to make the full leap to a market oriented agriculture based on secure and properly enforced land rights. Non-transparent and expensive procedures for obtaining own land result in a highly unequal outcome, where the well-connected and well-informed gain at the expense of others. Official decrees and production targets together with abuse of power continue to circumscribe the right of farmers to decide over the use of their land. Consequently, land use becomes inefficient and unsustainable as farmers lack incentives to invest and adopt practices consistent with a long term perspective. Poorly functioning markets also impose constraints on the development of agriculture.

Out of this bundle of constraints on enhancing the role of agriculture as a source of employment and incomes and as a dynamic sector in the national economy, two core binding constraints may perhaps be identified.

First, the lack of comprehensive and secure property and user rights to land. Unless this constraint is removed, other measures aimed at the development of the agricultural sector are likely to prove rather ineffective. Comprehensive and secure property and user right – including the obvious right to choose what to grow, from whom to buy and to whom to sell – would also be a fundamental and necessary step towards solving the quagmire in the cotton sector.

Second, the problem of the debt-ridden farms needs to be solved. The situation in the cotton sector is particularly acute. It is to a large extent controlled by local monopolies, so called futurists, who act as monopoly suppliers of inputs and credits to the farmers and as monopoly buyers of the raw cotton. By overcharging for inputs and credits and underpaying for the cotton crop, producer margins are squeezed to the point where it has become impossible for farmers to make ends meet even during "good years", with accumulating debts as a result. As a consequence production suffers and the cotton sector has become a poverty trap rather than a source of improved employment and incomes.

The Government is presently working with the donor community on a solution to this problem. As most of the debts are "bad" and many also rest on doubtful legal grounds it is important that the debts are discounted down to their actual market value before any settlement process begins. Once, but only when and if, this has been achieved, measures should be considered whereby the government assisted by the donor community bail out the indebted farm households. At the same time the practice whereby a share of the debts accumulated by collective farms in the past is shifted over to newly established private farms as part of the decollectivisation process should be discontinued and corrected retroactively.

---

[1] World Bank (2006b).

Other constraints to pro-poor growth in agriculture will no doubt also need to be addressed. Even if a good foundation for a market based agriculture are put in place, pro-active measures will be needed to overcome the constraints imposed by poorly functioning markets. The government have an obvious role to play in the provision of extension services and can also play an active role in fostering market based up-stream and downstream linkages to a and from agriculture.

Additional measure – beyond establishing secure property rights and solving the problem of debts – are also likely to be needed in the cotton sector to release the present stranglehold of the so called futures companies (at times in liaison with local governments) on the farm households. However, such measures will probably be of little avail unless the two fundamental constraints identified and discussed above are released.

The need to create enabling conditions for private sector development.

The private sector needs to assume the role of the main engine of growth in Tajikistan and the development of, in particular, small and medium sized enterprises, is crucial for enhancing employment and income opportunities. The private sector is essentially developing from scratch. It is to be expected that it will for some time to come be confronted by problems associated with poorly developed and functioning markets and a lack of positive externalities.

The institutional and regulatory framework for private sector development remains highly inadequate at the same time as it in some ways is overly intrusive. The building and consolidation of a sound legal framework needs to be continued at the same time as strong and valid arguments have been put forward in favour of further deregulation and the removal of a considerable part of the regulatory framework that supports activities that serve few purposes other than harassing business proprietors and creating scope for rent seeking. A measure of success in this endeavour is likely to reduce the costs of doing business while it opens up better prospects for earning a return that can match the perceived potential incomes form labour migration. Only when this is achieved are Tajik households more likely to invest their money in the private business sector than in sending members of their family abroad.

To achieve this end, also the improved provision of infrastructure and various public goods, such as dependable and impartial judicial and police services, are likely to be needed in addition to setting sight on the directly unproductive consequences of the regulatory system as described above. Anything that allows for arbitrary and therefore both unfair and unpredictable action on part of authorities that are to be the arbiter of the rules is likely to tilt the playing field in all but the direction of becoming more straight and level.

Investing in human capital formation through education

There are also a number of constraints that unless addressed will pose a threat to long term economic growth and development in Tajikistan, including the erosion of human capital. Results from investments in human capital formation typically materialise in the long-term. Concerted action may therefore be essential today to achieve the desired results half a generation from now. An observed drop in attendance both in primary and secondary school, most visible among girls, is therefore a source of great concern. The low level of public investment and spending on education translates into poor physical conditions of school and under-paid teachers. This result in a poor quality and relevance of the

instruction offered and is also likely to negatively affect the perceived status of public education, perhaps education as such. 'The low wages of the teachers and the poverty of the teaching environment, including the lack of adequate infrastructure and equipment and of appropriate teaching aids and updated tools for the transmission of knowledge, lead many teachers to feel that they are being neglected by the Government and are not respected by society' (UNICEF 2004, p. 8).

Eventually, the low levels of investment in human capital formation will affect inter-generational poverty where poverty traps may easily develop. In addition, to sustain current levels of growth the population must match the increasing demand for skilled labour. The external labour market has become an obvious point of reference and an alternative income source creating a wage floor at home below which the supply of labour dries up. Evidence already speaks of bottlenecks in the form of a shortage of qualified people willing to work at the prevailing rates, creating further up-ward pressure on wages, in the process adding to inflationary pressures in the economy.

Reversing environmental degradation and the erosion of natural resources

Improper management of Tajikistan's greatest capital, water, will have both short and long term implications for pro-poor growth. All water infrastructures, whether for supply and sanitation, irrigation or flood protection, are in poor condition. This negatively affects peoples' health, short- and long term productivity in agriculture and industry and the productivity of ecosystem services.

The immediate constraints to pro-poor growth are especially revealed in the alarming situation of increased numbers of waterborne diseases in the country. Long term effects, although already apparent in many areas, will come from no or ill-prioritised investments and lack of reforms and coordination between relevant sectors and the water sector. Water and the manner by which it has been used and manipulated by the centrally planned system has affected most areas of Tajikistan's economy and environment and if immediate actions are not taken might reach irreversible collapses of some production units.

To be efficient, investments in modernising the water infrastructure need to be accompanied by fiscal and institutional reforms. In addition, modernisation must be a mix of technological, managerial and institutional upgrading that respond to stakeholders needs, integrate irrigation needs, hydropower activities, international relations, livestock, forest and environmental management. For the agricultural sector this needs to be combined with the creation of secure land rights. Government need to resume great responsibility here.

Adjusted net savings in show negative values since 2003. This means that the country's total wealth is declining. If Tajikistan continues to not invest or make non-profitable investments or subscribes to policies that persistently lead to negative adjusted net savings the actual foundation for growth can be jeopardized in the long term.

Preventing inter-generational poverty

The severe and widespread poverty that resulted from the economic collapse and political and social turmoil in the 1990s can be characterised as being of a transient nature since it can largely be ascribed a rather sudden lack of opportunities combined with much increased vulnerability. However, severe transient poverty may soon turn into chronic and inter-generational poverty as living in poverty erodes the human resourc-

es and deprives children and the young from building up resources needed for future years. There is evidence that such a development is taking place in Tajikistan, which, if not reversed, may condemn large numbers of young people to a future life in poverty as well as impose a long-term binding constraint on pro-poor growth.

Chronic as well as acute malnourishment among young children is widespread in Tajikistan. Some 17 per cent of all children under the age of five suffer from acute malnourishment and four percent are severely malnourished.[2] Chronic malnourishment is even more widespread. Well over a quarter of all children are stunted and almost one in ten suffer from severe stunting.[3] Malnourishment is primarily a consequence of material poverty and it is much more widespread among the poorest households. Sanitary conditions are also much worse among the poorer households than among the relatively richer ones. Less than half of the poorest quintile has access to an improved water source and some 70 per cent of this category use solid fuel for cooking, which is associated with a high risk of indoor air pollution.

From the perspective of inter-generational poverty, the falling standards of education are particularly worrisome. Net enrolment in primary education remains high for both boys and girls, though by no means universal. Especially the fact that large numbers of girls drop out after the age of 13–14 without completing secondary education is worrisome. The chances that a girl, in particular, or a boy will complete secondary education are strongly and positively correlated by the level of education attained by the mother. However, this does not imply that poverty has no bearing on the falling levels of education. Although there are no tuition fees, education brings direct costs for school books and other utensils. The opportunity cost may also be quite high as it reduces the scope of using children for work in or outside the household. This opportunity cost is likely to be particularly high in households where the husband has left to work abroad. Child labour is quite common, in particular among the poorer households.

It must be concluded that preventing inter-generational poverty requires urgent attention. It requires investments in a variety of areas and forms in children that Tajikistan can ill afford to postpone.

[2] Measured as weight over height.

[3] Measured as height by age.

1. Introduction

Life has never been as good in independent Tajikistan as it is today. After years of social and political turmoil and economic collapse, the peace and stability has been restored, the economy is picking up and living standards are increasing from the dismally low levels endured during most of the 1990s. Tajik authorities and others concerned with the development of the country can afford to shift the focus from short term crisis management to more long term strategic development planning. Such a shift is all the more important as the present economic growth, important and welcome as it is, is fragile. While a series of positive factors and developments have triggered growth, a foundation for sustainable pro-poor growth has yet to be laid.

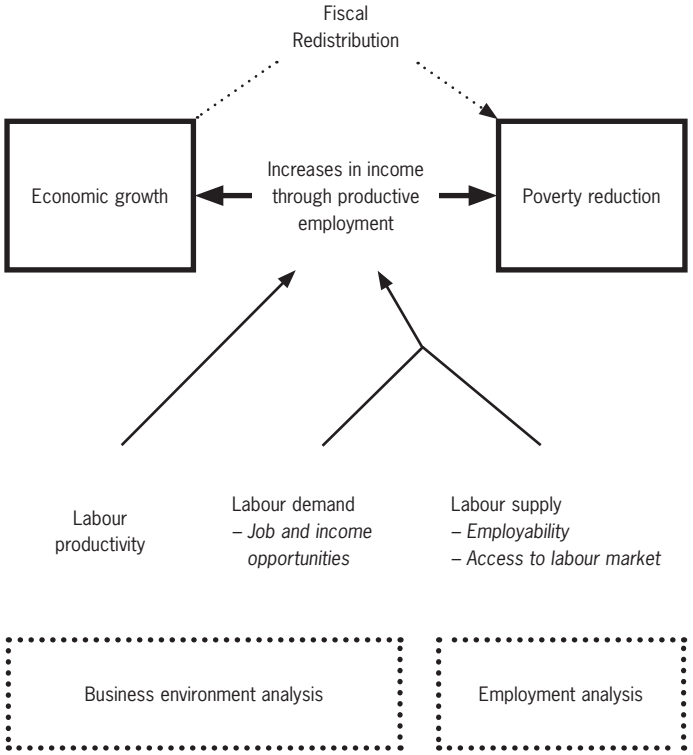
The objective of the present study is to identify and analyse the main challenges, constraints and opportunities for sustainable pro-poor economic development in Tajikistan, against the backdrop of the specific characteristics and contemporary development of the country.

The study is based on a methodology for analysing economic development from a poverty perspective developed within Sida, which focuses on the role of the economic actors, in particular the poor, as creators of economic development.[4] A focus on the poor as creators of growth calls for a focus on employment and labour productivity in economic analysis. The methodological approach in this study takes the human resources and the need to create conditions conducive to unleashing the creative and productive forces inherent in this resource base, with particular emphasis on the poor, as the starting point of the analysis. Hence, in countries such as Tajikistan with a significant share of its human resources working abroad, the integration of migration and resulting remittances in the analysis becomes essential. The coverage of the analysis is defined by the economic actors rather than where they perform their activities. Enhancing employment and the returns to labour by (i) strengthening the productive *resources and capacity* of the individual people, in particular the poor, and by (ii) opening up *opportunities* for all to make full use of the productive resources at hand, is seen as the main avenue for reducing income poverty and achieving pro-poor growth. Thus, it is crucial to consider the poor not only as consumers who should receive a share of the country's growth, but more importantly as active participants in the economy, which makes an employment analysis necessary,

[4] For a further methodological discussion see Lundström and Ronnås (2006a).

and as independent economic agents, which points to the importance of a business climate analysis. Employment and the remuneration derived from employment are determined by the supply and demand for labour. An employment analysis casts light on the supply side of labour and the functioning of the labour market, while a business environment analysis gives insights on the level of, potentials for and constraints to economic activities and the resulting demand for and, through productivity, returns to labour (Figure 1).

Figure 1.1: Interaction between the business environment analysis and the employment analysis for pro-poor growth



Source: Lundström and Ronnås (2006a), p. 11.

The study consists of two main parts, divided into seven chapters. Chapter Two – *Development Dynamics* – analyses the dynamics and characteristics of the dramatic economic development and transformation in the past few decades, exploring not least its implications on employment and incomes. Chapter Three through Five – *Employment Analysis, Macroeconomic Analysis and Business Environment Analysis* – provides analyses of the characteristics of the labour force and the labour market, of the macroeconomic situation and of the business environment against the backdrop of the challenges and issues highlighted in Chapter Two. Chapter Six – *Binding Constraints for Pro-Poor Growth* – concludes the study with an identification and discussion of the binding constraints for pro-poor growth in Tajikistan, based on the preceding analysis.

2. Development dynamics

Also by the standards of the typical post-Soviet experience, Tajikistan has had more than its fair share of trials and tribulations. Declaring itself independent in late summer 1991, the Central Asian republic soon found itself the victim of civil conflict. Although it had been the poorest of the Soviet republics, in relative terms it had also been the most heavily subsidised. Living standards may not have striked the outsider as particularly impressive, but employment was next to universal and educational and health standards were much improved compared to a generation or two earlier. For the most part, it had also been a reasonably peaceful corner of the far-flung Soviet domains, but now it faced collapse, both of the early transition variety and as a result of establishment of independence under conditions of civil war.

Official figures, incomplete and imprecise as they are, suggest that the economy may have contracted by more than two thirds between 1990 and 1997 (Table 2.1). It was only towards the late 1990s that the economy began to pick up again as peaceful conditions returned and support from the outside in the form of both remittances and ODA started to make an impact. As the new millennium began, growth accelerated, with GDP growth rates in the range of 10 to 11 per cent a year being recorded over the period 2002–2004. Although growth has since fallen back to single digit figures – 6.7 per cent in 2005 and about 7–8 per cent in 2006 – they have remained quite respectable and has instilled many government officials and observers alike with a measure of optimism.

This is not to suggest that no problems remain. One striking feature is the low levels of consumption and the deplorable state of large segments of the economy. Another is the importance of labour migration. A large part of the economically active population – just how large remains a matter of uncertainty and speculation – take up seasonal work abroad, primarily in Russia. The remittances sent home, although difficult to gauge with any measure of precision, have proven very important not only to the consumption levels of recipient households but also to growth as such. On the other hand these labour flows, and the degree to which Tajik households depend on a labour market external to the country, is indicative of the difficulties Tajikistan faces in creating rewarding job opportunities at home.

Table 2.1: Basic macro-economic indicators, 1992–2006.

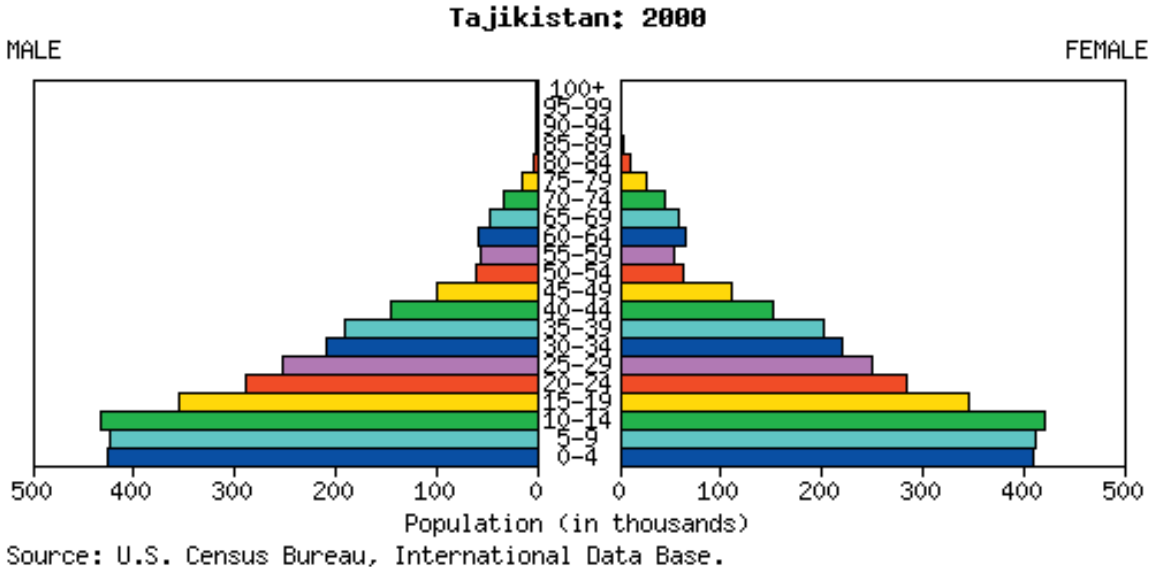
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*
GDP, TJS million (2005 prices)[1]	7,858	6,577	5,176	4.534	3,777	3,841	4,045	4,194	4,543	4,979	5,516	6,123	6,754	7, 207	
GDP annual growth rate (in per cent)[1]	-32.3	-16.3	-21.3	-12.4	-16.7	1.7	5.3	3.7	8.3	9.6	10.8	11.0	10.3	6.7	7.0
GDP annual growth rate (in per cent)[3]	-29.0	-11.0	-18.9	-12.5	-4.4	1.7	5.3	3.7	8.3	10.2	9.1	10.2	10.6		
GDP, nominal, USD million[2]										1,051	1,197	1,556	2,073	2,311	2,811
Inflation (CPI, annual average)[3]	1,157	2,195	350	609	418	88	43.2	27.6	32.9	38.6	12.2	16.3	7.1		
Inflation (CPI, end of period)[1, 3]							2.7	30.1	60.8	12.5	14.5	13.7	5.6	7.1	12.7
State budget balance (per cent of GDP)[3]	-31.2	-22.3	-10.1	-6.1	-5.8	-3.8	-3.8	-3.1	-5.6	-3.2	-2.5	-1.8	-2.7		
State budget balance (incl. investement, per cent of GDP)[2]										-3.2	-2.4	-1.8	-2.4	-2.9	1.7
Current account balance (per cent of GDP)[3]		-28.8	-20.1	-14.8	-7.1	-5.4	-9.1	-3.4	-6.4	-7.0	-2.7	-1.2	-3.9		
Current account balance (per cent of GDP)[2]										-5.1	-3.6	-1.3	-3.9	-2.5	-2.5
Exchange rate, TJS per USD, annual average[2]										2.4	2.8	3.06	2.97	3.12	3.3

* preliminary

Sources: (1) SSC (2006), p. 204; (2) IMF (2006), p. 22, and IMF (2007), pp. 20, 22; (3) EBRD (2004), pp. 38–44, 185, and EBRD (2005), pp. 48–54.

The manifest inability of the economy of generating faster employment growth is at least in part a function of demographic factors: unlike most other post-Soviet republics, since independence Tajikistan has experienced, and still experiences, high levels of natural population growth (about 22 per thousand during the opening years of the new millennium, down from an annual average of about 25 per thousand 1993–99). Although surprising in the light of substantial numbers of internally displaced persons and high levels of emigration, natural growth rates remained high during the years of civil conflict and has continued to outperform most other transition economies since.[5] As at above 30 per thousand it was higher still during the 1980s, this currently translates into a rapidly growing number of entrants to the working age population (Fig. 1.1).

Fig. 1.1: Age structure of the population of Tajikistan according to the census of 2000.



Much of this growth is rural in origin. Combined with a substantial outward migration of members of the dominant ethnic minority groups (Russians, other Slavic peoples, Tartars, Germans, etc.), who to a large extent resided in the major cities and towns, the higher than average growth recorded in rural areas has led to a relative (and during the civil conflict absolute) decline in urbanisation levels. With a positive natural growth rate and in-migration of an unknown magnitude, the statistical authorities estimate that urban areas do grow in population, but at a rate at which urban areas barely hold their own compared to the countryside. Thus, in 2005, 73.6 per cent of the population was believed to live in rural areas and 26.4 per cent were urban dwellers, figures that are only marginally different from those recorded by the census in 2000. Compared to the 1980s and in particular the 1970s, however, the gap has widened substantially, and then in favour of rural areas.

The concequences of these population trends are plain to see. Agriculture and other rural pursuits have had difficulties absorbing the new entrants to the working age population and it is also rural areas that appear to supply the great majority of those who leave for work abroad.

[5] Once migration is accounted for, population growth is of course lower, but even so the total average annual growth rated over the intercensal period of 1989–2000 remained a high 1.7 per cent per annum. All in all the population grew by 20 per cent over that period, about half of the length of which was marked by civil conflict (Rowland 2005).

Social inequality has increased and, as measured on the expenditure side (income data are of a low quality), the Gini coefficient did rise from a high 0.33 in 1999 to a still higher 0.36 in 2003, rural areas experiencing a more quickly widening gap than urban areas (World Bank 2005c, p. 9).[6] Poverty head count rates are also higher in rural areas, but not dramatically so and improvements as have been recorded have accrued both to the rural and the urban population of the country. The are, however, clear differences in living standard between urban and rural areas. In urban areas about 96 per cent have access to piped water or a public tap while in rural areas only 40 per cent. In total about 17 per cent of homes are connected to sewage system of which 2 per cent are rural. Similarly, data collected in 2003 suggest that there is no dramatic difference in the poverty head count rate between male or female headed households; if anything, the number is slightly smaller for the latter category. On the other hand, there are greater overall differences in inequality across female headed households than across the male headed ones (Falkingham and Baschieri 2004, pp. 14–17). Further has the increase in population in rural areas put great pressure on natural resources through the intense and changed use of arable land, water and forest.

While labour migration, domestic as well as external, can be seen as a way around the challenge of finding productive work that earns a decent income, at least the latter is not sustainable over the longer haul. If Tajik labour migration to Russia, which is largely seasonal and largely male, conforms to the experience elsewhere it is not likely to solve any long-term problems unless money earned to some extent is invested and not merely consumed. Investment need not only be of a pecuniary kind – also investment in human capital as a result of experience and training accessed abroad, or in the form of ideas (i.e., social remittances) can prove useful – but money needs to be channelled into activities that create future jobs and earnings in the domestic economy. This is all the more important, as a lack of prospects at home may result in the best trained deciding to leave for good, or at least until things have shaped up at home (which may amount to the same thing, if migrants put down their roots deep enough at destination). Indeed, brain drain is not an unknown phenomenon in Tajikistan, as both during the period of civil conflict and later large number of specialists left for greener pastures elsewhere. In such cases one would assume that universal patterns are replicated in Tajikistan, namely that not only the most entrepreneurial or most well-trained leave but also that they will bring their families along with them. Under such circumstances, remittances typically become less regular and smaller by volume over time.

The low level of investment in human resources may additionally pose an obstacle for other labour migration to continue along what has otherwise become a well-trodden (and therefore less costly) path to income earning opportunities abroad. Any erosion of educational and language training standards – and there is evidence that such erosion does in fact take place – will presumably make it increasingly difficult for labour from Tajikistan to find productive employment abroad. Such migration against the background of declining standards at home is thus not a viable long-term strategy to employ labour that cannot be absorbed at the origin.

Problems do not stop at the difficulties in finding productive employment for the new entrants to the labour market. The capacity to absorb an increasing number of people is made more difficult if, as in Tajikistan, the

[6] Note, however, that Republic of Tajikistan (2005), p. 4, give the corresponding figures as 0.47 and 0.51, respectively, which appears unrealistically high.

capital stock is worn down and little new investment is taking place. Savings are low and most investments as occur originate in the public sector. This becomes obvious from statistics as exist. However, this is made worse for the fact that there is another class of capital that is also being worn down, but remains unrecorded. This is the natural resource stock.

Although Tajikistan is in the enviable position of being able to generate considerable volumes of electricity by means of hydro-power, and its agricultural sector potentially has better access to water than is the case in neighbouring countries, the extraction of this and other resources are not equally in tune with the needs of sustainable husbandry. The environment was heavily taxed already during Soviet period, but today the situation is probably even worse because of unsustainable practices. As few or no resources are set aside for "maintenance" of the natural wealth of the country, important classes of natural capital inch closer to the situation where depletion, qualitative deterioration and downright destruction beyond the repairable are real threats. In particular, land and soil resources for agricultural use appear to be strained beyond the sustainable – in part because of increasing population numbers, in part because of large tracts of prime land being tied up in cotton growing organised in a non-viable fashion – and this is typically not taken into account in assessments of growth and development. Without therefore suggesting a looming disaster, it should also be noted that the extent to which erosion and landslides, many of them of an anthropogenic nature, occur now and may occur over the forseeable future might set in train a new wave of internal displacement not unlike that induced by the period of civil conflict in the early 1990s.

Finally, there is an external context that should be acknowledged. In labour migration, this has come to the fore as Russia in the past periodically has expelled illegal labour migrants. In mid-January 2007, Russia also introduced new legislation implying national quotas, stricter standards and constraints on the type of activities in-migrants may engage in. While it is too early to assess the impact of the new legislation, and in some respects Tajikistan and Tajik labour migrants may in fact be better off as a result of it, it goes to show that as a source country Tajikistan is vulnerable and largely hostage to the developments – economically as well as politically – in the predominant host country.

At this juncture it is also worth noting that Tajikistan suffers from being landlocked, a quality it shares with all its neighbours except China. However, it can be argued that in some respects Tajikistan is presumably worse off than many other Central Asian states, in that distances to major markets (and sources of supplies) are still further away than is the case for its neighbours. Given the current structure of transport infrastructure, Tajik export and import have a larger number of borders to cross when on its way to or from major its major trading partners, which besides Russia and Kazakhstan also include some EU members. The fact that many regional free trade initiatives have stalled and that relations with some neighbours, primarily Uzbekistan, have long been and still are tenuous does little to reduce the burden of being landlocked. The good news are that infrastructure, better political relations with Uzbekistan and progress on issues of regional free trade may all reduce the current level of "landlockedness". In the meantime, the country is also trying to make the most of the fact that major powers are keen to establish good relations with this Central Asian country.

3. Employment analysis

Population and labour force developments in Tajikistan are indicated by Table 3.1. As can easily be deduced from the table, population growth remains high but is declining. As such Tajikistan does not share the fate of most other post-Soviet states, but is rather like its Central Asian neighbours endowed with rich resources of labour. A declining number of births which still allows for positive natural growth may imply that the overall dependency ratio improves. In the Tajik case, this appears true as the child dependency ratio is declining while the old age equivalent is not much aggravated. There are considerable regional differences, however, and in many rural areas the overall dependency ratio is quite high (SSC 2005a). Other than this, however, Tajikistan has a rather favourable position, where the number of people that are in the right age groups for productive employment increases in relative terms. Thus, overall the share of the working age population out of the total has increased from 47 per cent in 1990 and 50 per cent at the end of civil conflict to 58 per cent in 2005.[7]

This seemingly enviable position, however, presupposes that opportunities for productive employment is in fact made available to all the new entrants and to those in the labour age cohorts that are unemployed or under-employed. In Tajikistain, this is clearly not the case. Also a casual look suggests that a large share of the new entrants to the pool of labour age residents of the country do not find such productive employment. Already the statistic that the working age population grew by more than half – it increased by 57 per cent – over the period 1990–2005, while the economy contracted by more than a third, should sound an alarm simply by suggesting that the ability of economy to create new jobs needs to be quite impressive by any standard.

To find out more about the situation, we need to assess the supply of labour, both in terms of numbers and quality. Hence, in the following an attempt will be made to assess the number of economically active, the number of unemployed and the extent to which labour migration com-

[7] Note that a number of changes regarding the definition of working age have taken place over the years. No attempt has been made to correct for these changes. As a result, figures referred to in Table 3.1 are strictly speaking not comparable over time. Thus, in 1995–96, the working age for men was defined as the 16–59 years bracket and for women 16–54 years. In 1997–2000, it was 15–59 for men and 15–54 for women. In 2001 it was 15–60 for men and 15–55 for women; changing yet again in 2002, at which point 15–62 was considered working age for men and 15–57 for women. In addition, other sources (e.g., those using the 2003 Tajikistan Living Standards Survey) are likely to employ yet other definitions.

pensates for the lack of remunerative job openings at home. Furthermore, already at this stage we may note that the labour market, whether formal, informal or on-farm, is to some extent structured along the lines of gender. Therefore, some effort will have to be made to track that particular dimension, as will issues of education and other inputs potentially of use in trying to increase the employability and productivity of labour resources as are made available to both national and foreign labour markets.

On the surface of it, the economically active population appears to be making some headway. In terms of absolute numbers as reported by the State Statistical Committee, it has grown from a low of 1,777,000 in 1996 to 2,154,000 in 2005, or by 21 per cent in ten years. Yet, as a proportion of the total tally (i.e., of those of working age), the economically active population has decreased. In fact, with an average annual net growth of the working age population of 4 per cent a year over the past ten years (1996–2005), much of which accrued during the second half of that interval, the economy needs to grow very fast indeed to be able to absorb the new entrants. That it has not been able to do so is borne out by other data as is available. Although formal unemployment (that is, registered) is said to be declining and in 2005 stood at about 42,000 individuals or less than a per cent of the working age population, also the labour participation rates suggest that the lack of a capacity to create income generating opportunities is likely to be a problem of quite some magnitude. Thus, in 1990 the participation rate peaked at more than 77 per cent of those of working age; today it has dropped to 56 per cent (2005), which is only a marginal improvement on the low of 53 per cent recorded in 2002.

It is fair to conclude therefore that the ability of the economy to create jobs does therefore not keep up with the pace of net growth of the working age population. However, as formal registration of unemployment appears to understate the real state of affairs quite substantially, other information will have to be brought into the analysis to be able better assess the situation. Unfortunately, there are no reliable time series distinguishing between primary sector activities on the one hand and secondary and tertiary at the other, the former more often being characterised by seasonal swings that make unemployment less relevant a yardstick than under-employment. (Indeed, unemployment figures carry little meaningful information in a situation where there are no unemployment benefits and few can afford to stay unemployed.)

One piece of solid statistical information that exists is the labour force survey conducted in July and August 2004, another being the returns to the Tajikistan Living Standards Survey (TLSS) carried out in 2003. Although limited to what are in effect snapshots, both allow the possibility of digging a bit deeper than official time series allow. Thus, with respect to unemployment the labour force survey suggests that 195,000 were unemployed (SSC 2005b, p. 29), a figure which is more than 4.5 times higher than the official time series on the labour force puts on record. The difference, presumably, is that while the figures in Table 3.1 refer to registered unemployment, the labour force survey also picks up unemployment over and above that which is formally registered. More than half, or 55 per cent, of this unemployment is urban in origin and overall a slight majority of those unemployed are men.

In fact, the returns to this labour force survey are at a remove from the data in Table 3.1. Rather than an economically active population of 2,132,000, the 2004 labour force survey supplies the figure 2,649,000, but on the other hand suggest that 1,331,000 rather than 1,710,000 are

Table 3.1: Labour resources and employment in Tajikistan, 1985–2005 (in thousands unless otherwise noted).

	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Population 1)	4,631	5,361	5,506	5,567	5,580	5,634	5,701	5,769	5,876	6,001	6,127	6,250	6,376	6,507	6,640	6,780	6,920
Of which:																	
Working age 2)	2,209	2,514	2,578	2,597	2,602	2,630	2,789	2,847	2,929	3,025	3,127	3,247	3,397	3,573	3,740	3,842	3,984
Nonworking age	2,422	2,847	2,928	2,970	2,978	3,004	2,912	2,922	2,947	2,976	3,000	3,003	2,979	2,933	2,900	2,938	2,936
Urban	1,519	1,677	1,698	1,653	1,614	1,582	1,564	1,548	1,566	1,594	1,625	1,660	1,691	1,720	1,758	1,792	1,825
Rural	3,112	3,684	3,808	3,914	3,966	4,051	4,137	4,221	4,310	4,407	4,502	4,590	4,685	4,787	4,882	4,988	5,095
Labor force participation rate 1, 3)	76.1	77.3	75.5	73.6	75.9	73.6	70.9	65	63	61	57	55	55	53	55	56	56
Total labor resources 4)	2,175	2,469	2,526	2,675	2,607	2,623	2,811	2,840	2,909	3,038	3,125	3,186	3,301	3,463	3,644	3,777	3,893
Of which:																	
Economically active population 4)	1,681	1,939	1,971	1,917	1,877	1,887	1,890	1,777	1,842	1,855	1,791	1,794	1,872	1,904	1,932	2,132	2,154
Of which:																	
Total employment 4)	1,681	1,939	1,971	1,909	1,855	1,855	1,853	1,731	1,791	1,796	1,737	1,745	1,829	1,857	1,885	2,090	2,112
Registered unemployment	...	...	...	8	22	32	37	46	51	59	54	49	43	47	47	42	42
Non-working students 4)	216	231	237	230	230	234	199	205	192	245	301	343	357	386	442	463	476
Working age population at home 4)	278	299	318	530	405	405	721	857	875	938	1 033	1,049	1,072	1,173	1,313	1,182	1,263

Source: State Statistical Committee of the Republic of Tajikistan (http://www.stat.tj/).

Notes: 1) end of year

2) see footnote 2 of main text

3) defined as the ratio of economically active over working age population, in%

4) annual averages

non-active (SSC 2005b, p. 29). The balance is made up of a larger number of gainfully(?) employed, who according to the survey number 2,453,000 (as opposed to 2,132,000) and of course a larger number of unemployed as already noted. One reason for the diverging figures can be found in the fact that the survey, rather than following official retirement ages, opts for a 15–75 year bracket. While perhaps more realistic in view of the rather high degree of activity of those on a pension (see below), it should also be noted that this cannot be the full explanation, as the number of people recorded in the 60–75 year group number slightly in excess of 200,000. The labour force survey simply suggests that both the size of the working age population and the ranks of the economically active are somewhat larger than the official time series suggest.

Judging by the returns to the TLSS, people of working age in rural areas are more likely to be part of the labour force than those in urban areas; figures are about 60 and 45 per cent, respectively (Falkingham and Baschieri 2004, p. 21). About half of those who are part of the working age population in urban areas, but who are not active in the labour force, are said to engage in home care, suggesting low female labour participation rates there. While rural areas record an almost similarly high figure (>45%), the fact that far fewer overall are considered outside the labour force is suggestive of the different natures of primarily agricultural and non-agricultural pursuits. Other categories that figure prominently in the non-active part of the working age population are students, pensioners and the disabled/not healthy; this is true both of urban and rural areas.

According to the TLSS 2003, the overall male participation rate peaks at about 90 per cent for the 40–49 year group and for women at 61.4 per cent for the same age group. At the other end of the scale, the below 20 group show the lowest figures, both for men (40.5%) and women (35.8%), which could conceivably be a result of many of those in their upper teens studying. Figures from the State Statistical Committee, as summarised in Table 3.1, also suggest as much; here the number of non-working students at the lower end of the working age population have more than doubled over the period 1990–2005. However, drop out rates also from compulsory school, and relatively low and stagnating enrolment and completion rates at the secondary level, may indicate that a lack of opportunities in the labour market are as important.

Furthermore, there are also considerable differences in labour participation rates by gender, by age and across the urban-rural divide, with young urban-based females at 15% per cent being the category that participates the least in the labour force save for men and and in particular women in the 60 years plus age bracket (who are otherwise not typically considered part of the economically active population in Tajik statistics). As such it is indicative of a labour market that does not offer a reasonable, let alone unlimited, supply of job openings, particularly not in the formal sector (which often is more important, generally and relatively speaking, to women than to men). This could be compared to rural women of the same age, where the corresponding figure is 43 per cent (Falkingham and Baschieri 2004, p. 22). The relatively high activity of those who have turned 60 years of age – where almost one third of all men and one-tenth of all women participate in the labour force – recorded by the TLSS 2003 is symptomatic of the need to supplement official pensions, the low level of which often necessitate work to make ends meet.

The decreasing labour participation rate recorded by official statistics translates into low aggregate productivity levels, as is illustrated by Table 3.2. The table shows that in 1997 the average productivity of the working

Table 3.2: Labour productivity, 1990–2005.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Population 1,000	5,361	5,506	5,567	5,580	5,634	5,701	5,769	5,876	6,001	6,127	6,250	6,376	6,507	6,640	6,780	6,920
Working age 1,000	2,514	2,578	2,597	2,602	2,630	2,789	2,847	2,929	3,025	3,127	3,247	3,397	3,573	3,740	3,842	3,984
Labour force 1,000	1,939	1,971	1,917	1,877	1,887	1,890	1,777	1,842	1,855	1,791	1,794	1,872	1,904	1,932	2,132	2,154
Index 1990=100																
Population	100.0	102.7	103.8	104.1	105.1	106.3	107.6	109.6	111.9	114.3	116.6	118.9	121.4	123.9	126.5	129.1
Working age	100.0	102.5	103.3	103.5	104.6	110.9	113.2	116.5	120.3	124.4	129.2	135.1	142.1	148.8	152.8	158.5
Labour force	100.0	101.7	98.9	96.8	97.3	97.5	91.6	95.0	95.7	92.4	92.5	96.5	98.2	99.6	110.0	111.1
GDP change%		-5.4	-32.3	-16.3	-21.3	-12.4	-16.7	1.7	5.3	3.7	8.3	9.6	10.8	11.0	10.3	6.7
Index 1990=100																
GDP	100.0	94.6	64.0	53.6	42.2	37.0	30.8	31.3	33.0	34.2	37.0	40.6	44.9	49.9	55.0	58.7
GDP per capita Index	100.0	92.1	61.6	51.5	40.2	34.8	28.6	28.6	29.5	29.9	31.7	34.1	37.0	40.3	43.5	45.5
Productivity working age	100.0	92.3	62.0	51.8	40.3	33.4	27.2	26.9	27.4	27.5	28.6	30.0	31.6	33.5	36.0	37.0
Productivity labour force	100.0	93.1	64.7	55.4	43.4	38.0	33.6	32.9	34.5	37.0	40.0	42.1	45.7	50.1	50.0	52.8
LF Participation rate	77.1	76.5	73.8	72.1	71.7	67.8	62.4	62.9	61.3	57.3	55.3	55.1	53.3	51.7	55.5	54.1

Source: Own calculations based on Table 3.1.

Remark: The figures do not take fully into account of Tajik labour working abroad. If the contribution of the Tajik labour working abroad to the GDP of other countries, notably Russia, is taken into account, the labour productivity of the working age population may well by 2005 have been at least twice as high, as the figure given in the the table.

age population reaches a low of little more than a quarter of the level recorded at the end of the Soviet period. Although there are good reasons to believe that the late Soviet era statistics exaggerate production levels quite substantially, there is no way to escaping the impression that declining overall productivity is a fact of life. It does look somewhat better if instead the same statistic is calculated using the economically active part of the working age population, but it still remains low. In both cases, however, improvements since the mid-1990s can be observed, but despite strong GDP growth over the past few years productivity levels remain well below what they used to be.

Inevitably, in the aggregate and on average this also translates into low earnings, which in turn provides a better explanation than the seemingly quite reassuring official unemployment statistics to the large migratory flows that Tajikistan has witnessed over the past decade. Work in the Tajik economy, while often necessary simply to bring food onto the table, is not particularly rewarding. Instead, the external labour market made available thanks to primarily demand for low skilled labour in Russia offers a way around the shortage of decently remunerated jobs and other income earning activities available at home.

Labour force data and information on the economically active population as given in Table 3.1 does little to indicate the scope of labour outmigration, whether of a permanent or temporary character. In addition to early estimates on migration in the Commonwealth of Independent States (Zayonchkovskaya 2000) and the returns to the census (e.g., Rowland 2005), which pick up both forced migration and labour migration as usually conceived, there is little to go by. Zayonchkovskaya (2000, p. 353) quotes information to the effect that by the late 1990s, an estimated quarter of a million inhabitants of Tajikistan worked elsewhere in the CIS. While high, such a figure is in line with, indeed often lower, than alternative estimates as have been made.

Thus, early studies by the IOM suggested that 632,000 Tajiks had left the country in search of work abroad; this is the equivalent to about one-sixth of the working age population, a figure that is in line with that provided by the World Bank. IOM also arrived at conclusion that about one million Tajiks (or 15 per cent of the population) live in households whose main source of cash incomes were remittances sent from abroad (Olimova and Bosc 2003). The World Bank for its part, basing itself on the TLSS 2003, suggested that 17 per cent of the working age population works abroad, temporarily or permanently.[8] This can be compared to the figures suggested by the Ministry of Labour and Social Affairs at about the same time, namely that 420,000 Tajiks worked abroad.

None of these figures are at the extreme ends of the spectrum. Kireyev (2006, p. 7) notes that the 2000 Russian census found a mere 64,000 Tajiks living in Russia, with a further 26,000 being there temporarily. This can be compared to figures that the same author culled from the Russian Federal Migration Service suggesting a figure of 600,000 to 800,000 illegal Tajik migrants in Russia, corresponding to about 10 to 15 per cent of all illegal immigrants there. For all practical purposes, the recently established labour migrant quota of 600,000 for Tajikistan may serve as a low estimaet of the actual number of migrants.

---

[8] Incomes generated from labour migration sent home in the form of remittances was also collected by the TLSS, but by the recognition of the responsible agency (the World Bank) itself the figures thus collected – which suggested that remittances made up about one-tenth of the average household income in 2004 – are not fully trustworthy and therefore best left aside for the moment. As for the 2004 labour survey, still less information was collected.

Also disregarding the extreme values, these are very substantial numbers indeed and as such they are suggestive of a domestic labour market that is not able to provide job opportunities to all those who would like to work, at least not at rates at which they are willing to work for. The large numbers of migrants have presumably also reduced the costs of going abroad for work related purposes. Information flows no doubt have improved with the increased numbers and the existence of migrant networks, and possibly also those on the employers' side, are likely to have made the process one that is at once both less risky and more familiar both to migrants themselves and the sending households. The fact that many members of the Tajik population also master Russian is likely to have proven helpful, as would their willingness to take on so called 3D jobs, that is, those that are dirty, dangerous and disliked by the host country work force.

Although there is no consensus on the volume of remittances sent home – balance of payment data for 2004 (i.e., that sent through the banking system) quoted by Kireyev (2006, p. 6) suggests something like USD 430 million, others arrive at twice that figure – the very fact that also estimates at the lower range end up with figures corresponding to 20 per cent of GDP or more implies that job opportunities in Russia and the remittances sent home are likely to influence the Tajik labour market (see Chapter 4.1 for a further elaboration on the likely sums involved). It will do so by at least two mechanisms, the one being the effect on the potential labour supply, the other by influencing the wage level at which working age Tajik are willing to take up a job.

As for the former, the lack of qualified persons available for hire in the labour market would be indicative of bottlenecks appearing as a result of few Tajiks mastering a given craft or profession, or as a result of a drain of persons with the skills in demand, or a combination of both. If so, the chances are that this is suggestive of an external labour market which appears more attractive than the domestic one, the result being that the supply at the current wage rate therefore dries up. This can also happen as a result of the other mechanism, the reservation wage, which is likely to increase the greater the inflow of remittances are. In both cases, employers will have to contend with a higher wage bill, which might be difficult if those available in the job market or the type of job on offer do not support productivity levels and hence revenues that are commensurate with the increased labour cost.

This in turn suggests that labour abundance *per se* is not likely to be the answer to the question what Tajikistan's economic future might be. A great many labour hands seemingly implies that labour intensive industry is the way forward, but if that labour is available at rates that are out of line with either potential productivity levels in the economy or prevailing world market prices for low-skilled labour, or both, then (re)industrialisation by means of labour intensive production is not going to materialise. Instead, productivity enhancing activities, most prominently training and education in various guises, is called for to make the labour force attractive to foreign investors, exporters and others.

A common perception is that Tajikistan, being a beneficiary of the well-known advantages of the Soviet system of education – a system that guaranteed universal literacy and numeracy, plus a pool of people with vocational skills – does indeed have the requisite well-educated labour force. However, there are a number of indications that this may not be the case or at least not true to the extent that would be desirable. First of all, the years of civil conflict made many leave the country, and then not least

many of the most well-educated. The brain drain has since continued, if perhaps at lower rates. Professionals of all sorts, in particular if members of the ethnic minorities rather than belonging to the ethnic majority, have left, but also others with important skills, for instance of a vocational nature, may have chosen to deploy those skills elsewhere. Alternatively, they may simply have left as part of the large out-migration of labour, ending up doing work well below their formal educational level or accumulated level of experience. In such cases, the skills once learnt are likely to deteriorate, to no use to the individual or the economy back home.

A closer look at educational statistics reveals, however, another trend that is equally troublesome if not worse: educational standards as measured by formal education attainment are deteriorating. It comes as no surprise perhaps that the years of civil conflict made the educational system work less well, or prevented children and youth from availing themselves of whatever educational services that continued to operate throughout these troublesome years of violence, internal displacement and substantial refugee flows across the border from Tajikistan.

Although complete statistics on school attendance and completion of schooling does not appear to exist, data as made available (Table 3.3) is suggestive of some trends. While the number of schools have increased, and so have the overall enrolment, the number of teachers has remained essentially constant, implying longer hours for teachers, fewer hours of instruction for pupils or larger classes, or any combination of the three. The total number of pupils in primary and secondary schools taken together – and the latter appear to include those under secondary vocational training – also grew by a respectable 25 per cent over the 1996–2005 period. This no doubt reflects the return of more peaceful conditions and the very large cohorts of children entering and passing through the relevant ages.

Although the statistics do not allow for a break down by the different levels of education provided, it is also worthy of note that the number of pupils leaving secondary school without a complete cycle of training – a figure that has increased by almost half over the ten year period – is substantial. What is more, they outnumber those who complete secondary training by some margin and the gap appears to widen over time, even though also the number of those who complete secondary school as intended has increased since the mid-1990s. This is also reflected in attendance rates, which at the secondary level in 2004 stood at 85.6 and 72.9 per cent for boys and girls, respectively (UNICEF 2006), or 88.0 and 72.7 per cent for boys and girls, respectively, if we turn to preliminary results of the Multiple Indicator Cluster Survey of 2005 (SSC 2006, p. 60). Incomplete as the statistics are, all of this is suggestive of stagnating or lower enrolment or at least higher drop out rates in secondary school. The supplementary statistics on vocational training at the secondary level given in Table 3.4 supports this contention, but here positive signs include that both numbers and girls' share of those attending are picking up as compared to the situation at the end of civil conflict; that the overall numbers are lower than during Soviet times is perhaps only to be expected. This is said under the reservation that statistics as such do not provide much by way of information on type and structure of training (e.g., relative labour market needs), and the quality of the training on offer.

Moderately positive as some of the above data might seem, the most important figures, those of primary school attendance and completion, are not available. Evidence available indicates, however, that enrolment,

also in compulsory school, has decreased while the number of drop outs have increased. The primary school enrolment rate for boys, as given by the Multiple Indicator Cluster Survey of 2005, is only marginally better than that of secondary school attendance, namely 89.1 vs. 88.0 per cent. For girls, at 88.2 per cent the primary school attendance rate is lower, but only marginally so, compared to boys (SSC 2006, p. 60).[9] (The primary school enrolment rate for boys, as given by the UNICEF basic education statistics for 2004, looks much better: 98.1 per cent for boys and 94.5 per cent for girls; see UNICEF 2006). Here the drop in moving from the primary to the secondary level is quite noticeable. As importantly, overall primary school enrolment rates are thus lower than would be desirable. They do imply, after all that one in ten child stays at home also during the age when school is compulsory.

Against such a background, a survey undertaken by UNICEF in 2003 usefully supplements these incomplete statistics by noting that 40 per cent of the girls surveyed did not believe that education would impact the quality of their lives (UNICEF 2004). A still greater share, or 57 per cent, of parents were of the opinion that it is more important to educate sons than daughters. Furthermore, socialisation into traditional gender roles is more easily accomplished at home rather than at school. It is perhaps not particularly surprising, then, that the number of girls dropping out of school appears to increase with increasing age and grade levels.

Whatever the exact figures, the trends sketched above are not particularly favourable at a time when there is a need to improve the productivity of labour in the Tajik economy. Although Table 3.2 indicated that productivity levels have improved over the past decade, that increase was on the back of the very low levels registered in the wake of civil conflict. Productivity improvements, which are essential to the long term earning capacity and hence to living standards, are also critical to the ability of the Tajik economy to sustain its current level of growth. Without such improvements, the increasing integration with and spillover effects from the Russian labour market will no doubt take its toll. In this connection it should also be noted that not only formal education, but also deficiencies in health and nutritional status may have an adverse impact on productivity levels. Tajik authorities appear to recognise as much and the very low shares of budgetary expenditure allocated to these sectors are now beginning to rise. The question is if this is a powerful reaction enough and whether it will make a positive impact in time.

[9] The primary school enrolment rates, as given by the UNICEF basic education statistics for 2004, look much better: 98.1 per cent for boys and 94.5 per cent for girls; see UNICEF (2006). These figure however are estimates rather than survey based.

Table 3.3: Number of pupils in primary and secondary education, 1991–2005.

	1991–1992	1992–1993	1993–1994	1994–1995	1995–1996	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001	2001–2002	2002–2003	2003–2004	2004–2005	2005–2006
Number of institutions	3229	3320	3377	3443	3460	3470	3524	3560	3591	3604	3695	3729	3745	3775	3807
of which:															
primary schools	614	623	625	644	654	663	664	663	675	663	660	662	667	671	676
basic (incomplete secondary)	634	690	707	739	747	800	812	834	829	834	839	848	842	834	829
secondary (complete)	1917	1944	1990	2005	2005	1967	1993	2012	2035	2050	2139	2163	2181	2098	2112
others (special education, night schools)	64	63	55	55	55	49	55	51	52	57	57	56	55	55	54
Number of pupils, thous.	1325.4	1272.7	1240.5	1288.1	1322.8	1340.9	1388.9	1451.3	1479.3	1521.8	1579.5	1636.7	1660.0	1673.8	1682.2
Total no. of incomplete secondary school graduates	110.9	106.5	102.2	102.2	99.1	104.9	102.1	54.2	117.8	117.4	105.8	105.0	144.0	144.5	149.8
Total no. of complete secondary school graduates	89.1	81.6	67.4	56.4	57.9	53.5	50.6	50.7	51.7	36.8	65.2	70.3	63.3	64.9	79.6
Number of teachers	99.1	99.1	100.0	95.7	92.8	92.6	91.3	94.9	96.8	98.5	100.2	101.0	101.5	99.1	98.5

Source: State Statistical Committe of the Republic of Tajikistan (http://www.stat.tj/).

Table 3.4: Number of pupils in secondary vocational schools, 1991–2005.

	1991–1992	1992–1993	1993–1994	1994–1995	1995–1996	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001	2001–2002	2002–2003	2003–2004	2004–2005	2005–2006
No. of secondary professional schools, units	43	48	50	50	44	47	44	42	48	53	50	50	56	56	54
No. of students in secondary professional schools, thous.	40.7	38.3	38.4	34.9	26.8	23.5	19.9	19.4	23.2	25.3	23.8	25.1	29.0	29.6	31.8
of which women, thous.	17.8	16.3	15.4	15.1	12.6	11.7	9.6	9.4	11.6	11.2	11.5	12.7	15.5	16.6	17.9
in% to total number	44	42	40	43	47	50	48	48	50	44	48	50	53	56	56
No. of students per 10 000 of population, units	73	69	67	60	46	40	33	32	37	41	38	40	44	44	46
No. of matriculates to secondary professional schools, thous.	14.9	12.7	14.0	12.9	9.5	8.3	7.7	7.7	9.8	9.1	8.9	9.6	9.6	9.7	11.5
No. of graduates, thous.	13.7	12.9	12.5	11.1	8.7	7.9	6.8	6.1	5.7	6.9	7.7	6.5	5.0	7.6	8
per 10 000 of population, units	25.1	23.2	22.2	19.3	14.9	13.5	11.3	10.0	9.3	11.3	12.2	10.2	8.0	112	11.6

Source: State Statistical Committe of the Republic of Tajikistan (http://www.stat.tj/).

4. Macroeconomic analysis

4.1 The undersized economy

Despite rapid growth in the past few years, the Tajik economy remains far below the pre-independence level. After reaching a nadir in 1996, it has recovered to a point where it presently equals approximately two thirds of the level attained fifteen years ago (Table 4.1). The combination of a rapid growth in the working age population and economic contraction resulted in an even more dismal development of labour productivity. By 2005 labour productivity was only slightly more than half of the level in 1990, while the productivity of the working age population less than forty per cent of its level in 1990 (Table 3.2).[10] However, as will be discussed below, the actual production and productivity of the Tajik labour force was much higher, as much of their production took place abroad, mainly in Russia.

As a consequence of the economic collapse and the still low level of economic development there is a severe mismatch between the quantity and quality of human capital in particular, but also with regard to physical capital, on the one hand and the ability of the economy to make full and productive use of this capital on the other hand. At the same time the small size of the economy makes it impossible to maintain the educational and skill level of the human capital and to reverse the erosion of the physical and environmental capital. A recent World Bank study concludes that 'In the next 15 years, the ratio of the capital stock and the GDP per capita in Tajikistan will increasingly normalize one way or another. This race between capital stock decline and GDP growth makes a huge range of economic outcomes in principle available for Tajikistan' (World Bank 2005, p. x). In other words, high rates of economic growth are needed to maintain the human capital at the same time as maintaining the human capital at a qualitatively high level and reversing the erosion of the physical and environmental capital is a prerequisite for sustaining growth in the future.

[10] Measured as value added (GDP) per person in the labour force and per person in working age, respectively.

Table 4.1: Economic development since independence (annual growth in% and index: where 1991=100).

	1991	1992	1993	1994	1995	1996	1997	1998	1999
% change	-5.4	32.3	-16.3	-21.3	12.4	-16.7	1.7	5.3	3.7
Index	100	67.7	56.7	44.6	39.1	32.6	33.2	34.9	36.2
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**		
% change	8.3	9.6	10.8	11.0	10.3	6.7	7.0		
Index	39.2	42.9	47.5	52.7	58.3	62.1	66.4		

Sources: SSC (2007, p. 207); IMF, personal communication.

As employment and income opportunities dwindled and Tajiks found it increasingly difficult to put their labour to productive use and to make ends meet, they increasingly resorted to migration in search of work abroad, mainly in Russia. As noted in Chapter 3, apart from some 400,000 people, mostly Russian and other ethnic minorities, who left Tajikistan in the 1990s, it is estimated that some 600,000 to 800,000 Tajiks, that is, about a quarter of the Tajik labour force, work abroad on a temporary or seasonal basis. Estimates on earnings from work abroad and remittances are uncertain and vary within a wide range. In 2005 between 500 and USD 600 million in remittances were channelled through the banking system and it is estimated that a comparable amount bypassed the banking sector using informal channels instead. Since then remittances sent through the banking system has increased sharply. In the second quarter of 2006 alone, an inflow of USD 241 million was registered, while the total inflow through the banking system for 2006 is estimated to have reached USD one billion. However, this sharp increase would seem to be primarily due to an increased use of the banking system for transferring remittances rather than to any sharp increase in the total amount of remittances. In any case, it can safely be assumed that the total amount of money sent or brought home by migrant workers amounts to at least USD 800–1,000 million per year, that is an amount equal to about 40 per cent of GDP.

Table 4.2: The size of the economy of Tajikistan and of the production of Tajik labour.

	GDP 2005	Total estimated income by Tajik labour working abroad	Remittances by Tajik workers abroad
USD (1,000)	2,332	1,600–2,100	800–1,000
USD per capita	337	234–303	116–145

Sources: Kareyev (2006); SSC (2007), pp. 9, 206.

Remarks: Figures are based on an estimated 600,000 – 800,000 Tajiks working abroad, which are in line with those estimated by the Russian Federal Migration Service. The recently announced quota for Tajik migrant labour in Russia will be 600,000. Earnings abroad and amounts repatriated to Tajikistan are based on a the results of a World Bank survey quoted in IMF (2006). Both IMF and official Tajik sources estimate the total amount remitted and repatrited by Tajik migrant labour to be around USD 1,000 million. An exchange rate of 3.09 Tajik somoni per US dollar was used to recalculate the figures to USD. The total population in Tajikistan in 2005 was estimated at 6.92 million.

The impact of labour migration on livelihoods and on the Tajik economy has been truly staggering (Table 4.2). Remittances and money repatriated by migrants working abroad add some USD 116 to 145 to the meagre per capita income of USD 337, suggesting that the net disposable income of Tajikistan is some 30 to 40 per cent higher than its GDP.[11] However, only part of the incomes of migrant workers are saved and remitted back to the home country. A World Bank survey of migrant workers estimated that a Tajik worker earns on average some USD 2,700 during a typical nine month stay abroad.[12] The value added produced by the migrants is considerably larger, as the migrant workers receive only part of the production value as income. Assuming that the incomes earned by the migrant workers amount to some 50 – 60 per cent of the value added they produce, the contribution by Tajik workers to the Russian GDP can conservatively be estimated to be somewhere in the range of USD 2.7 – 3.3 billion. In other words, the Tajik labour force contributes considerably more to the GDP of Russia than to that of Tajikistan (USD 2.3 billion). This puts the mismatch between the labour force resources on the one hand and the size of the Tajik economy on the other in a rather stark light and gives at least a sense of the underutilisation of the Tajik labour force in the Tajik economy. It also indicates a considerable potential, but as of today a lost opportunity to improve fiscal earnings. As further discussed below, investments in human, physical and natural capital will be crucial components in securing sustainable growth in Tajikistan. Public resources play an important role in achieving this

4.2 The need to put growth on a new footing

Growth picked up markedly at around the turn of the millennium after the long and severe decline in the 1990s. It peaked at over 10 per cent per year 2002–2004, but has since declined somewhat to a still respectable 6–7 per cent. A number of factors contributed to this growth. The restoration of peace and the much improved security situation together with the establishment of macro-economic stability provided important prerequisites for growth were important factors behind the improved economic performance. The gradual replacement of state control over the allocation and use of productive resources by market mechanisms resulted in improved allocative efficiency in the economy and in increased and less distorted economic incentives. This generated growth simply by putting the existing productive resources, not least labour, at more efficient use. Last, but not least, the large and increasing inflow of remittances released the demand constraint on growth and opened up an opportunity for demand-led growth based on increased domestic purchasing power. The importance of this latter factor should not be underestimated. Following the economic collapse after independence, Tajikistan was caught in a vicious circle of falling demand, resulting in falling production and incomes, which further depressed demand. Tajikistan found itself in a deep economic depression. The inflow of remittances was a major factor behind the breaking of this vicious circle. It greatly helped release the demand constraint on growth. As a consequence, as discussed below, the constraints on growth are presently to be found on the supply side rather than on the demand side.

Yet, none of the growth enhancing factors outlined above can be expected to sustain growth in the long term. The peace dividend and the

[11] The Gross Disposable National Income equals the Gross National Income (GNI) plus net current transfers from abroad.

[12] An average wage of USD 300 a month for work in Russia seems to be a standard estimate.

growth enhancing impact of macro-economic stability were both one-shot effects and their impact on growth have by now by and large been reaped. It is also reasonable to expect that the growth of remittances will soon level off and that their impact as a growth stimulus will begin to decline. Lastly, while there may still be considerable productivity gains to be made from improvement in the functioning of the market economy and from removing remaining obstacles to market based allocation and use of productive resources, not least in agriculture, this source of growth will eventually also dwindle. Indeed, the decline in the growth rate in the past two years may serve as an early warning that the past triggers of growth are loosing effect.

Table 4.3: Sector distribution of GDP (percentages).

Sector	2000	2001	2002	2003	2004	2005
Agriculture	25.1	23.8	22.2	24.2	19.2	21.2
Manufacturing	33.1	33.5	33.1	30.4	23,6	22.7
Construction	2.1	2.7	2.0	2.9	7.5	4.6
Services	31.1	30.9	32.7	31.8	38.7	40.3
– Trade	10.9	10.7	11.7	11.4	16.5	16.2
– Transport & com.	4.8	5.0	5.5	5.3	6.6	7.7
GDP, TJS million	*1,787*	*2,564*	*3,376*	*4,761*	*6,167*	*7,207*

Source: SSC (2007), pp. 206 and 211.

A review of the present structure and sources of growth underscores that it rests on a weak and unsustainable basis and that fundamental changes are required to put the economy on a path of high, sustainable and pro-poor growth (Table 4.3). The services sector, notably trade, has spear-headed growth in the past few years, while the relative importance of manufacturing has declined and that of agriculture has fluctuate around a declining trend. The rather poor performance of agriculture can be explained by institutional failures, loss of ecosystem services, inefficient infrastructure, low productivity and loss of traditional markets and the specific problems in the cotton sector. Production of food crops have increased while cotton production has stagnated at a very low level. The lacklustre performance of the manufacturing sector is further underlined by the fact that one large aluminium plant accounts for more than 40 per cent of the value added in the manufacturing sector (IMF 2005, p. 9).

A closer look at the structure of growth suggests that it is primarily been driven by a growth of consumer services and, to a lesser degree, construction. While an increase in the relative weight of services in the economy was to be expected in view of the fact that it was considerably under-dimensioned during Soviet times and as many services have rather low entry barriers for the establishment of new businesses, the skewed pattern of growth will need to be rectified for growth to become sustainable. What seems to have happened is that only the non-tradable sectors are growing in response to the increased demand resulting from the large inflow of remittances, while the demand for tradables is largely met through increased imports of consumer goods rather than by domestic

suppliers.[13] This conclusion is further corroborated by the fact that growth in remittances has been accompanied by rapid growth in imports.[14] The manufacturing sector in particular will need to be reconstructed and to resume a more prominent place in the economy and as an engine of growth. The agricultural sector, too, will need to be put on a much sounder footing to assume a more dynamic role in the economic development.

The need for a more broad based growth, in which the manufacturing sector will need to play a much larger role, is based on several interlinked considerations.

- Consumer services as an engine of growth will eventually run out of steam.
- Much of the growth generating capacity of remittances are lost to the domestic economy as incomes are used on imports of consumer goods.
- The development of manufacturing is needed to strengthen intersector linkages and enhance multiplier effects in the economy.

Manufacturing plays a crucial role for several reasons:

- It can create upstream and downstream linkages to agriculture, thus facilitating as well as enhancing the growth impact of a development of agriculture.
- It is essential for the development of producer oriented services and thus a more broad based development of the services sector.
- A diversified manufacturing base can create strong linkages and multiplier effects within the sector, at the same time as it would create an environment more conducive to furthering manufacturing growth.
- The growth enhancing impact of FDI, which is expected to increase sharply in coming years, would be greatly improved if FDI could be embedded in an environment where it can link up with domestic firms.
- A more broad based economy would in itself create a business environment better able to hold its own by reducing transaction costs. In particular in a situation where there are severe physical and other obstacles to trade in goods, which could otherwise compensate for the small size of the economy, this is a consideration that carries some weight.
- It will assist poor rural households that have resorted to subsistence to get out of their subsistence living situation.

The second reason why the present growth will not be sustainable has to do with the low levels of savings and investments. As noted above, growth has so far to a large extent been achieved through a more efficient allocation of production factors and improved incentives resulting from the introduction of a market economy. In other words, existing resources have been put to better use, which in itself is an important achievement. On the eve of independence Tajikistan was comparatively well-endowed with both human and physical capital. Over the past fifteen years this capital has been poorly maintained, has gradually

[13] Non-tradable goods are those that for practical or other reasons are not, at least not extensively, traded internationally and, hence, where the supply has to be met domestically. Tradable goods and services are those traded on the international market.

[14] The external economic relations and trade pattern is discussed at greater length below.

eroded and in some areas no longer appropriate for the new economy. In the coming year, growth as may accrue to the economy will increasingly have to be based on a combination of productivity gains and a more intensive use of factors of production. This can only be achieved through investments on a much larger scale than has been the case so far. Although FDI and ODA as Tajikistan may be able to attract can play an important role towards this end, it will also require substantially higher levels of domestic savings.

The need for a high rate of increase in productivity is underscored by the large scale of labour migration abroad. As noted in Chapter 3, the impact of migration undermines the international competitiveness of the Tajik economy through two channels: (i) through an upward pressure on domestic wages and (ii) through an appreciation pressure on the exchange rate. An upward pressure on domestic wages in coming years will come from two sources. First, the fundamental law of supply and demand suggests that as labour is withdrawn from the domestic labour market the price of labour will eventually increase. More importantly, shortages of specific skills are likely to appear, resulting in increased wages for the skills and professions where demand outstrips supply as well as a constraint on growth. Second, as work abroad and incomes from relatives working abroad become even more widespread, the reservation wage or wage floor, that is the minimum wage for which people are prepared to work will increase. As the costs and risks of migrating for work to Russia come down, there will be an increased pressure on wage levels (and returns to self-employment) to approach the levels of income that can be obtained in Russia.[15] Such a development can be quite rapid as developments in countries such as Albanian and Moldova have demonstrated (e.g., Lundström and Ronnås 2006b). Increased wages and returns to labour are obviously very much welcome and necessary to reduce income poverty. Indeed, it is a main objective of current development efforts and policies of Tajikistani government (Republic of Tajikistan 2007). However, when brought about in this manner – through the impact of large scale migration for work abroad – there is a risk that the sustainability of the economic development will be compromised as the country's international competitiveness is undermined. This risk is further added to by the upward pressure on the foreign exchange rate and the inflationary pressure resulting from the large inflow of remittances. Thus, there is a risk that reduced competitiveness will slow down growth in the long term, and by implication domestic employment and income opportunities, and turn Tajikistan into a permanently migration based economy. Under these circumstances, a sustained rapid increase in productivity (total factor productivity) becomes of paramount importance as the only way of maintaining competitiveness and making possible sustained pro-poor growth.

4.3 The need for investments

According to estimates by IMF gross investments amount to about 14 per cent of GDP, more than half of which are public (Table 4.4). Domestic savings are somewhat lower – 10–11 per cent of GDP – the difference being made up by foreign sources. Private investments in particular are far too low to sustain a continued high rate growth. Indeed, they are most probably not even sufficient to make up for the depreciation of the

[15] As migration entails high social and other non-material costs as well and as most people are disinclined to migrate for work unless they have strong economic reasons to do so, labour migration will not in itself bring wage levels in Tajikistan up to the level of those in Russia. However, it will most certainly reduce the extremely large differences that exist at the present.

existing physical capital, let alone allow for upgrading and expanding it. It is safe to conclude that the level of private sector investments would need to increase several fold to sustain the present rates of growth.

The low levels of private savings and investments are not primarily due to any lack of capacity to save or a shortage of capital for investments, but in a household preference for investing in migration to work abroad rather than in enhancing the domestic productive capacity and in domestic employment and income opportunities. As discussed at greater length in Chapter 5 below, household investments in migration for work abroad can be estimated to amount to about USD 250 million per year, that is, more tha 10 per cent of GDP and considerably in excess in of the total domestic private investments (Table 5.5). This, in its turn, implies that the total domestic savings are considerably higher than those officially reported.

Table 4.4: Growth, savings and investments, 2003–2005.

	2003	2004	2005
GDP (TJS 1,000)	4,761.4	6,167.2	7,206.6
GDP growth (%)	11.0	10.3	6.7
GDP/capita (USD)	237	310	338
Fixed capital investment	12.0	13,5	14.0
– Public	6.5	8.1	8.0
– Private	5.5	5.4	5.9
Gross national savings	11.9	10.9	10.6
– Public	4.8	5.8	3.9
– Private	7.1	5.1	6.6

Sources: IMF (2006), p. 24; SSC (2007), p. 205.

Remark: Figures on private investments and savings are estimates. By comparison, total 'investments' in migration overseas in 2005 can be estimated at 264 million USD or 19.5 per cent of GDP (see Table 5.5).

Public infrastructure investments are rapidly picking up, largely thanks to ODA and investments from overseas. While these investments are welcome and very much needed, they will not by themselves neither generate growth nor automatically result in growth. The picture becomes even grimmer when the low levels of investments in human capital and the erosion of the environmental resources are brought into the picture.

The extremely low levels of public investment in human capital – primarily in education and health, but also social security – are a major source of concern (see Table 4.5). At twelve and four US dollars, respectively, the per capita levels of investment in education and health are far below the levels required to prevent an erosion of the educational and health status of the population, let alone improve it.

Much higher rates of investment are needed in education and health in order to reverse the erosion of the human capital base that has taken place since independence from the comparatively high levels attained during the times of the Soviet Union. The increasing integration of the Tajik labour market with that of Russia and the need for sustained high rates of productivity increases in the economy discussed above further underscores the need for sharply increased levels of investment in human capital. There is obviously a scope for augmenting the efficiency of the

public sector and of public expenditures on education, health and other social sectors. There is most probably also a certain scope for improving domestic public resource mobilisation and for increasing public revenues and expenditures as a share of GDP. It is equally clear that it is of great importance that measures in this direction are taken. Still, such measures notwithstanding, rapid economic growth is a prerequisite for increasing the public resources needed to bring up investments in human capital to a level that is satisfactory from a human perspective as well from the perspective of providing a basis for increased productivity.

One way of illustrating the country's true savings and assessing if the country is following a sustainable economic path is to estimate the adjusted net savings.[16] Adjusted net savings depicts the "truer" level of saving after accounting for depreciation of produced capital, investments in human capital and depletion of natural capital.

Table 4.5: Government revenues and expenditures as percentage of GDP and in USD/ capita, 2005.

	% of GDP	USD/capita
Government revenues	18.8	64.20
Government expenditures	22.6	77.10
– Education	3.4	11.70
– Health	1.2	4.30
– Social security and welfare	3.1	10.70
GDP	100.0	337.00

Sources: IMF (2006), p. 28; SSC (2007), p. 206.

Remark: Exchange rate USD 1 = TJS 3.09. Figures are based on IMF estimates.

Table 4.6: Calculated adjusted net savings (% of GDP).

% of GDP	2003	2004	2005	2006
Gross National Savings	11.9	10.9	10.6	5.7
Consumption of fixed capital	- 7.1	- 7.4	- 7.6	- 8.7
Education expenditures	2.0	2.0	2.0	2.8
Energy depletion	- 0.5	- 0.4	- 0.4	- 0.4
Mineral depletion	n.a	n.a	n.a	n.a
Net forest depletion	n.a	n.a	n.a	n.a
CO2 damage	- 3.9	- 3.8	- 3.4	- 2.0
Particulate emission damage	- 0.2	- 0.2	- 0.2	- 0.2
Soil depletion	- 1.3	- 1.2	- 1.3	- 1.3
Water damage	- 3.8	- 3.0	- 2.8	- 2.5
Adjusted net savings	*-2.9*	*-3.1*	*-3.1*	*-6.6*

Sources: World Bank (2003, 2004, 2005, 2006a) and the authors own calculations (see the Appendix for the respective estimates). Note that Gross National Savings estimates for 2006 are derived from World Bank estimates, as are estimates for Consumption of fixed capital for all years. Explanations of other calculations are found in the Appendix.

[16] Also referred to as genuine savings (see World Bank, 2006c).

According to the World Bank, adjusted net savings for Tajikistan amounted to -2.8 per cent of GNI in 2006 (World Bank 2006a). This estimate, although already negative, does not include two of the country's most important but also most eroded resources, water and soil, nor does it take into account the erosion of human capital through migration. According to the Tajik National Action Plan to Combat Desertification (MNP 2000) about 97.7 per cent of the territory of agricultural lands is to some degree subject to erosion. As is described in more detail below, water is in many places so polluted due to anthropogenic, industrial and agricultural waste it is not fit for drinking even if boiled.

In addition, in the calculations of the World Bank zero values are assigned to mineral and net forest depletion. This is most likely explained by lack of reliable data, but provides an incorrect picture of the savings. Some 70 mines are in operation in Tajikistan producing 40 different kinds of minerals (ADB 2004; UNECE 2004; Levine and Wallace 2000, 2004) and when considering the thousands of tons of waste of antimony, mercury, lead, zink and gold created from the mining each year (UN-ECE 2004) the output of mining is most likely larger than zero. Due to lack of information, however, no estimate is provided for mineral depletion. Similarly, data published by the Tajik Forest Research Institute differ considerably from those obtained through remote sensing observations (UNECE 2004). Due to the specific geological situation in Tajikistan the main value of forest is to protect the environment, that is, to provide services such as water storage, prevent erosion and soil degradation. For this reason logging is prohibited except for sanitary and restoration work. Consequently, the main estimate for forest depletion is not in lost future revenues from logging but rather the prevention of ecological damages such as soil erosion and landslides. Due to lack of data, and the difficulties in estimating these values, the estimate is not included in the genuine savings table although it is likely to be considerable.

In conclusion, even if estimates for mineral and net forest depletion are omitted due to questionable data, when including the erosion of soil and water pollution the estimates for 2006 results in a negative saving of 6.6 per cent of GDP preceded by increasing negative values since at least 2003.[17] This means that the country is slowly eroding the very resources underpinning the growth potential of the country. In the absence of increased and properly prioritised investments in several productivity enhancing sectors such as the water sector, future possibilities for growth will be severely weakened and productivity for example in the agricultural sector is likely to continue to decline.

4.4 Investing and prioritising in the water sector

Water is a key economic asset to Tajikistan, especially for the agricultural sector but also as a mean to generate electricity. All water infrastructure, whether for supply and sanitation, irrigation and flood protection is in poor condition. Given the small and decreasing investments made for the water sector as a whole (apart for hydro-power) the infrastructure is close to a complete collapse while the country is wasting huge quantities of water and deteriorating its quality. In agriculture, which is currently the largest consumer of water, distribution efficiency for irrigation is only around 50 per cent due to poor quality and inadequate irrigation infrastructure. This has resulted in a situation where only about 72 per cent of irrigated land is in use, 12 per cent

[17] See the Appendix for explanations of the different variables included in the estimates and how they are estimated.

has been abandoned and 16 per cent has been lost to salinisation.[18] As a consequence, an increasing amount of marginal land is used resulting in huge problems of soil erosion. The Ministry of Land Reclamation and Water Resources has estimated that salinisation reduces cotton production by about 100,000 tons a year.

The funding for maintenance of irrigation and drainage dwindled from USD 72 million in 1991 to USD 6.5 million in 2002[19] or from USD 88/ha in 1990 to USD 14.30/ha in 2003 (World Bank 2006b). As a result 50 per cent of the irrigation systems and 65 per cent of the pumping systems are worn out. At the same time the hydro-power operating and maintenance budget was USD 60 million in 1990 and USD 40 million in 2004. As for water supply and sanitation, the domestic water consumption is reported to be 550 litres/capita a day, 60 per cent of which is lost due to leakages. About 60–80 per cent of all water supply networks have reached the end of their service life and about a third of the water supply systems have completely broken down.

According to the World Bank lack of access to safe drinking water and sanitation systems, including the breakdown of irrigation system[20] is a major contributing factor to high incidence of communicable diseases in Tajikistan (World Bank 2005b). Access to piped drinking water has decreased from 63 per cent of the population in 1997 to 50 per cent of the population in 2000 and after that increased to 54 per cent in 2003 (TLSS, 2003). Piped water is predominately found in urban areas while more than 40 per cent of the population in rural areas use untreated hazardous drinking water from rivers, channels, irrigation ditches and wells. Access to piped water does, however, not necessarily guarantee a safe drinking water supply. The efficacy of purification of water did not exceed 40 per cent in 2000. In 2003 the Sanitary Epidemiological Services took 9,645 samples to analyse bacteriological contamination and only 28.8 per cent met the standard.[21] In Tajikistan 45–60 per cent of intestinal infections are transmitted by water (61–67 per cent in villages and 32–41 per cent in town) and the incidence is steadily increasing as indicated in Table 4.7.

Table 4.7: Incidence of infectious diseases in Tajikistan 1995–2002, per 100,000 population.

Infectious disease	1995	1996	1997	1998	1999	2000	2001	2002
Diarrhoea	845	664	893	984	1,199	1,366	1,152	1,046
Hepatitis	349	139	274	120	161	158	149	130
Typhoid	27	213	491	169	114	71	54	52
Dysentery	148	90	81	62	61	42	33	35

Source: Republic of Tajikistan (2003a).

[18] The figures differ between sources. The magnitude of land abandoned ranges between 12–18% of irrigated land and land lost to salinization ranges between 15–18% of irrigated land (UNECE 2004, World Bank 2006b). According to UN (2004), 2,500 ha are lost annually to salinisation.

[19] Versus requirements of 21–28/ha for gravity fed systems and 60–150/ha for pump fed sytems (UNECE 2004).

[20] The fact that drainage systems are no longer adequtely maintained and cleaned has meant an dramatic increase in malaria (during the Soviet time endemic malaria had been nearly eradicated from Tajikistan) since those provide a better breeding ground for malaria transmitting mosquitoes in ditch water reservoirs and other stagnant pools (World Bank 2005b).

[21] Republican Sanitary-Epidemiological Service (2004).

Given the current level of GDP and the fact that major improvements need to be made in several water related sectors (also those not mentioned such as flood and landslide protection), priorities have to be set. Those should be based on cost analysis of the various options and their added values, including social and environmental implications. The priorities set in the Poverty Reduction Strategy Paper as indicated in Table 4.8 show a very small financial commitment by the Government to water and sanitation, to be compared by the 25 times larger commitment to develop energy. Is this optimal and truly in line with the prospect of future growth or, for that matter, of poverty reduction?

Given the recent experience of a centrally planned economy, to be cost efficient investments need to be accompanied by fiscal and institutional reforms to achieve the highest payoff. As regards the water sector, it suffers from a legacy where institutions and capital were designed neither to allocate limited resources efficiently nor to ensure quality. The current structure of service charges for water use does, for example, not provide the financial incentive to secure and use water rationally nor does it ensure cost recovery for water services and maintenance. Similarly, the water emission charges and fines fail to reduce and prevent water pollution.

Table 4.8: Confirmed financing and unmet needs during the PRSP period 2007–2009 (USD, million).

Sector	Anticipated total need	Budgeted for	Total external financing	Unmet needs
Development of regional cooperation	279.9	1.7	219.7	58.1
Development of transportation	581.6	32.3	345.2	204.1
Development of energy	1899	123.3	864.4	911.2
Development of industry	1024	0	138.0	886.9
Development of agriculture	225.8	21.1	151.7	52.9
Education	157.9	20.4	61.8	75.7
Health	160.8	26.2	82.2	52.4
Social welfare	46.2	0.5	11.6	34.1
Water and sanitation, housing and municipal services	180.2	5.4	35.6	139.3
Environment	47.8	1.8	22.5	23.5
Total PRS spendings	4798.7	239.3	2014.4	2545

Source: Adapted from Republic of Tajikistan (2007), Table 7.

4.5 The external sector

The external account reflects the importance of overseas labour migration and remittances to the economy as well as the dynamic economic development in recent years. Labour has emerged as Tajikistan's most important export, generating almost as much foreign exchange earnings

as other exports combined (Table 4.10).[22] Remittances compensate for the large trade deficit, but is also no doubt a major contributing factor behind the deficit as much of the inflow of remittances is spent on import of consumer goods.

Tajikistan's geographic location implies major obstacles for trade. Its isolation is further underscored by the difficulties and high costs of transporting goods and people through Uzbekistan. With new and improved physical infrastructure transport and communication facilities to other countries in the region, notably China, may greatly improve in coming years and may quite dramatically change Tajikistan's relative location (and isolation). However, for the time being high costs of transport restricts exports to goods with a rather high value per weight/volume and increases costs of imports.[23]

Tajikistan's other two main exports, apart from labour, are aluminium and cotton. The export of aluminium may largely be seen as a proxy for export of energy, as the raw material, alumina, is imported and processed into aluminium, which is exported. This process is highly energy intensive and thus exploits Tajikistan's comparative advantage in cheap hydro-power. The net value of the export of aluminium has for several years fluctuated around USD 200 million, but increased sharply to USD 663 million in 2006 as a result of a quite dramatic increase in the world market price of aluminium. Earnings from the export of cotton, a traditional pillar in the Tajik economy and trade, has fallen as a consequence of the disastrous situation in the cotton sector and now amounts to less than 5 per cent of Tajikistan's GDP. The capital account reportedly changed dramatically in 2006 as the result of a very much larger inflow of foreign direct investments and as public lending for development purposes, primarily from China, assumed totally unprecedented proportions.[24]

[22] Great caution must be exercised in interpreting the various entries in the balance of payment. Not only are "Worker remittances" as a factor income and remittances entered under "transfer inflows" indistinguishable, but it is also difficult to distinguish foreign exchange inflows from exports from those of remittances. Hence, an arbitrary formula for distributing inflows between exports and remittances, based on the size of the individual inflow, has been used. Small transfers from abroad have been classified as primarily remittances, while larger transfers have been classified as proceeds from exports. This formula has, not surprisingly, proved to be inadequate and has recently been revised. These arbitrary classifications and reclassifications have obvious implications not only for the estimated magnitudes of exports and remittances, but also for the estimates of the trade balance and the balance of transfers.

[23] For a good trade diagnostic undertaken by the World Bank, see World Bank (2005a).

[24] At the time of writing the balance of payments account for 2006 was not yet available.

Table 4.9: Balance of payment 2000–2005 (USD, million).

	2000	2001	2002	2003	2004	2005
Current account	*-61.9*	*-60.9*	*-16.7*	*-4.8*	*-57.0*	*-18.9*
Goods & services balance	-76.0	-121. 5	-159.6	-152.5	-225.1	-428.0
Trade balance	-81.5	-114.1	-123.8	-119.5	-135.5	-322.8
– exports (f.o.b)	838.9	651.6	699.1	906.2	1,097.0	1,108.1
– imports (f.o.b.)	-920.5	-765.7	-822.9	-1,025.7	-1,232.4	-1,430.9
Services balance	5 594	-7 391	-35.9	-33.0	-89.6	-105.2
Factor income	-20.6	-18.5	-41.1	-70.3	-57.5	-40.8
– workers remittances	0.2	-0.2	-0.3	0.0	0.0	0.2
– direct investment inc.	0.0	0.0	0.0	-0.7	-1.3	-2.2
– other investment income	-20.8	-18.3	-40.8	-69.6	-56.2	-38.8
Balance on transfers	34.6	79.1	184.0	218.1	225.6	449.9
– transfers inflows	36.5	93.0	201.7	285.1	348.4	599.9
– transfers outflows	-1.9	-13.9	-17.7	-67.0	-122.8	-150.0
Capital account	*67.3*	*53.9*	*72.4*	*62.7*	*93.4*	*101.5*
Direct investment	23.5	9.5	36.1	13.6	272.0	54.5
Other investment	43.8	44.3	36.3	31.9	-178.6	47.0
Net assets (- increase)	43.5	44.4	34.8	30.7	127.0	47.0
Errors & omissions	*-17.6*	*-12.6*	*-25.9*	*-30.3*	*-32.5*	*-77.1*
Overall balance	*-12.2*	*-19.7*	*29.8*	*27.6*	*3.9*	*5.6*

Source: National Bank of Tajikistan. (http://www.nbt.tj).

Table 4.10: Development and structure of external trade (USD, million).

	2002	2003	2004	2005	2006
Exports (f.o.b.)	697.0	797.9	914.9	908.7	1,399.0
– aluminium (net export)	220.1	193.7	278.6	201.2	662.8
– electricity (net export)	-14.8	-6.4	-7.4	-5.6	-17.8
–cotton	128.0	192.7	161.6	143.9	128.7
–other goods	103.1	120.5	132.4	149.2	171.8
Imports (c.i.f.)	687.5	881.3	1,375.2	1.329.8	1,722.6
–oil & gas	91.9	97.3	134.7	152.7	226.3
–wheat	35.7	31.2	48.4	76.1	77.0
–other	299.6	455.5	842.3	681.0	985.8
Memorandum item					
Remittances					800–1,000

Source: National Bank of Tajikistan (http://www.nbt.tj).

Remark: Net export of aluminium calculated as export of aluminium less import of alumina. The figures on total exports as well as total imports differ although they come from the same source. The discrepancies for exports may be due to arbitrary estimates of the share of inflows that derive from exports and remittances, respectively, and retrospective revisions of these estimates. The discrepancies for imports are probably largely due to the fact that they are entered as f.o.b. in Table 4.9 and as c.i.f. in Table 4.10.

5. Business environment

An immediate consequence of the discussion in the preceding chapter is that remittances come across as a major fact of Tajik life. Futhermore, along with the benefits brought about by the return of peaceful conditions, under which the realignment of the economy made possible and necessary by the transition from Soviet-type central planning to market economy has been able to procede at a much higher speed than was possible during the years of civil strife, macro-economic stability has been achieved. Together these three features of the Tajik economy presumably account for a considerable part of the achievements to date with respect to economic growth.

The dependence on remittances, although clearly a very important and often also necessary part of the livelihood strategies of many Tajik households, carries a number of problems, many of which are of a social nature. In addition, it is not likely that seasonal labour migration to Russia and elsewhere, is a sustainable practice. If not, it will have an immediate and negative effect on those households that depend on this resource – and it will have an impact on economic growth. It is here that the inability, unwillingness or otherwise to commit money received to anything other than consumption needs is likely to surface. For Tajikistan to maintain its enviable recent track record of economic growth, in addition to maintaining or improving upon its rather successful macro-economic policies, investments are needed in order to expand the capacity of the economy as whole and to create future jobs and income earning opportunities for its population. However, the data and analysis presented in Chapter 4 suggest that investment levels remain low, with respect to some types of critical resources such as human capital and environmental services close to zero or palpably negative.

In the private sector, remittances are one of the main potential sources of such investments. Little, however, has been put aside for uses that might enhance the ability to generate future earnings. Although this should be balanced by the realisation that foreign direct investment appears to be picking up, and that the public sector envisions itself as a source of rapidly growing investment, it is indeed telling that there appears to be but a limited expansion of private sector activities in the economy. To understand why, we need to turn to the business environment provided by the Tajik economy.

5.1 The private business sector

Although Tajikistan is to a large extent a country where employment and income earning activities are still related to agricultural sector activities, there is a non-agricultural sector to reckon with. It is not nearly as big or as dynamic as would be desirable, indeed necessary, if the economy is to continue grow at rates anywhere near those recorded in the very recent past. While it is true that official statistics suggest that the number of people earning a living from private sector activities have increased from 366,000 at the end of the Soviet period to 1,082,000 in 2005 – or 19 and 51 per cent of total employment, respectively – the implied shift is not quite as impressive as it might first seem. This is so as it also includes those parts of the agricultural sector that cannot be classified as state sector activities, that is, also (self-)employment in those former collective entities that have only partly been subject to privatisation and post-Soviet land reform. In fact, the problems of the agricultural sector warrants its inclusion here as one of the two main binding constraints alongside the business environment more generally. As such, it will be addressed separately in the next section (5.2).

Table 5.1: Composition of GDP, 2000–2005 (percentages).

	2000	2001	2002	2003	2004	2005
GDP	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
out of which						
– agriculture	25.1	23.8	22.2	24.2	19.2	21.2
– industry	33.1	33.5	33.1	30.4	23.6	22.7
– construction	2.1	2.7	2.0	2.9	7.5	4.7
– other	39.7	40.0	42.7	42.5	49.7	51.4

Source: State Statistical Committe of the Republic of Tajikistan (http://www.stat.tj/).

Table 5.1 provides information on the composition of GDP. While not a perfect substitute for information on the number of firms, in total or across industries, it is quite clear that both agriculture and industry are losing shares to construction and above the category "other". As the latter comprises trade, transporation and communication, and services (both public and private, both business and consumer services), it is quite clear that this is where the expansion is to be found. The surveys conducted by the IFC also confirm that most SMEs are to be found in the services category and new entrants appear more common in consumer services than elsewhere.

Following the logic of the World Bank's growth diagnostics, it may first be noted that the financial side of business activities leave a few things to be desired. The allocation of credit to the private business sector is very low – it typically hoovers at about 5% of GDP – and in part this is a result of low levels of domestic deposits. The domestic savings rate is low as is the level of private investment, the latter of which barely reached 6 per cent of GDP in 2005 (see Table 5.5).

Financial intermediation no doubt could be made more efficient, and access to formal finance could also be much improved. Few enterprises, in particular if small or very small (e.g., individual entrepreneurs) have developed contacts with banks; few of them have bank accounts of their own, for instance. Similarly, although remittances today are typically

channelled through the formal banking system as already described in Section 4.1, this has had little effect on deposits since money received appears to be withdrawn almost immediately.

If depositors are few, funds deposited are not very likely to find their way to business start-ups or small and medium sized firms planning to expand either. Surveys of small and medium sized enterprises (SMEs) undertaken by the International Finance Corporation in 2003 and 2006 indicate that the great majority of firms in need of external finance did not apply for such finance (89 and 73 per cent, respectively) and, when they did in 2002 there was more than 2:1 likelihood of not receiving any. By 2005, this had improved to the extent that 4 out of 5 who applied actually did get, thereby marking a quite a change over the situation capture by the first survey where access to finance was the single most important constraint across all classes of SMEs. Even so, only 6 per cent of responding firms identified banks as a source of investment funding (as set against 1 per cent in 2002). Loans as made available tend to be of short maturities, typically less than a year. Instead, at 88 per cent in 2002 and 85 per cent in 2005, personal savings and internal sources was the most common source of resources for investments for the firms polled by the IFC (2004, 2006, 2007). In the same survey, non-bank credits from friends and relatives were given as the second most important source, being used by 6 and 12 per cent, respectively.

A lack of collateral was an important reason for being turned down. As *dehqon* (or *dehkan*) farms[25] are part of this class of enterprises this is perhaps not a very surprising findings – and, in view of the partial nature of agricultural sector reforms, *dehqon* farms do have difficulties in providing collateral – but it is also noteworthy that the required level of collateral in loans as disbursed was typically quite high. In 2002 it usually amounted to twice the size of the principal, in 2005 only marginally less than twice the level. In addition to these formal requirements, one firm in four also reports that they were required to made unofficial payments in the process of obtaining the loan, typically in the range from 10 to 15 per cent of the loan extended.

Against this background it might be natural to draw the conclusion that financial issues are at the heart of the process whereby private sector entities become more common and grow from being individual entrepreneurs to small and subsequently medium sized enterprises – and that a lack of finance therefore stifles expansion. As will be developed at some length in Section 5.4 below this is only a part of the picture. Investments there are, but not necessarily in domestic business; rather (further rounds of) labour migration absorbs a sizeable portion of resources available. Considering the risks and non-economic costs involved in labour migration, it speaks volumes about the perceived lack of opportunities at home.

The relevant issue, therefore, is the question why domestic investment appears a less attractive proposition than the alternative use, in migration. A low level of domestic savings as such can of course be laid at the door of immediate consumption needs, but if the domestic demand constraint is less binding today than in the not so distant past then there are presumably both some room for new entrants supplying goods and services in demand and also money that could be set aside for other uses

[25] These are smaller units created from state and collective farms under the post-Soviet land reforms. The owners have usufruct rather than full ownership rights, but these usufruct rights are inheritable. In early 2006, there were about 18,300 such farms that were classified as individual or family *dehqon* farms, with another 8,740 classified as collective. Together they farm about 60 per cent of the arable land, with the former type accounting for two-thirds of this total, the later the remaing one-third.

than daily necessities, including investments. Instead low returns to economic activities other than migration (and possibly a few lines of non-legitimate business) emerge as a possibility as do bureaucratic obstacles and a "rough and tilted playing field". In the latter two instances, high levels of costs issuing from regulation and intervention are conceivable. If so, this in effect creates barriers to entry through the existence of high fixed costs relative potential revenues in much the same as a small or shallow market will. In both instances the high fixed costs will effectively prevent enterprising individuals from entering an industry or a specific line of business unless a considerable volume of demand (and hence lower unit costs) could be counted on. As a result, unless other fixed costs remain small and the economies of scale in production and distribution are not pronounced, businesses will not be able to take off. Similarly, import competition may undermine the ability of new domestic entrants, and particularly so if domestic firms meet high costs of finance and/or cost increasing red tape.

Again the returns to the surveys of the IFC are instructive. Regulatory barriers, inofficial fees and not least a large number of inspections conducted by various official authorities, be it for fire safety, taxes, sanitary conditions, energy use, the application of standards or any number of other purposes, are often strongly felt. Nine out of ten have had tax inspectors visiting them during the period running up to the surveys in 2002 and 2005, and almost one-third had seen the tax police visiting. There are some differences between different classes of SMEs that are worth noting. Thus, individual entrepreneurs find inspections and finance the main headaches, while small and medium sized companies also find permits and licensing requirements a barrier that weighs heavier on them than, say, taxations as such. *Dehqon* farmers, for their part find finance and registration procedures the most burdensome, with inspections and taxation less onerous but still a problem.

All of this points to the fact that government failures have contributed to restricting business activities. Although there are probably instances where market failures have a considerable impact on existing firms and potential entrepreneurs alike (information costs faced by financial institutions are but one example), costs and risks related to unclear or insecure property rights, the existence of corruption and arbitrary taxes and fees quite clearly figure prominently in accounts of the trials and tribulations of Tajik businesses. Also in an environment where macro-economic policies have pursued price stability with some success, thereby presumably increasing the availability and reducing the costs of credits, everything is not right and well. The private business sector, which accounts of an increasing share of GDP and employment, needs to grow faster still if it is to provide more job openings and income earning opportunities to the rapidly growing labour force of Tajikistan. The existing number of individual entrepreneurs, who number about 80,000, may seem large, but many more would benefit from this type of self-employment if conditions were more favourable. Similarly, some 40,000 SMEs and *dehqon* farms could no doubt generate more jobs than is now the case if given the right conditions to expand.

5.2 Agriculture

Agriculture provides the single most important source of employment and incomes in Tajikistan. Agriculture provides the main source of livelihood to well over 60 per cent of the population and accounts for

about two-thirds of the total domestic employment (World Bank 2006b, p. 4).[26] However, its contribution to GDP is considerably smaller; about 24 per cent in 2003 and a mere 21 per cent in 2005 (SSC 2007, pp. 206, 211).

Table 5.2: Average annual growth rate of output, capital, labour and total factor productivity (TFP) in the agricultural sector, 1981–2004.

	1981–1985	1986–1989	1991–1995	1996–2000	2001–2004
Capital	4.6	2.9	-2.4	-5.2	-3.2
Labour	3.1	2.9	5.7	0.9	1.8
Output	1.2	1.3	-26.3	2.4	7.1
TFP	-2.4	-1.6	-23.1	1.5	3.6

Source: IMF (2005).

As shown in Table 5.2 agricultural production declined sharply in the 1990s, at the same time as the agricultural labour force increased considerably as it assumed the role of an employment buffer in the wake of the near melt-down of non-farm sources of employment. As a result labour productivity and incomes in agriculture fell dramatically. The decline in capital inputs in the agricultural sector reflects a movement away from large-scale collective and mechanised farming to more labour intensive, often subsistence oriented, farming. Since 1999 agricultural output has increased, although it remains well below the pre-1990 level.

An important input into the agricultural production function, although not explicit in the IMF estimates shown in Table 5.2, is the decline in quality of soil and irrigation infrastructure. This is one of the reasons why yields of main crops and productivity remains very low, also by regional standards as shown in table 5.3. Tajik agriculture is highly dependent on irrigation. Some 85 per cent of the arable land is covered by irrigation systems, but about a third of these have fallen into disuse due to lack of maintenance and investments and as a consequence of soil degradation and salinisation (World Bank 2006b, p. 4).

Labour productivity and incomes from agriculture remain very low, as evidenced by the large discrepancy between the contribution of the sector to GDP and to employment, respectively, and by the fact that poverty remains more widespread in rural than in urban areas. By 2004, the average monthly wage in agriculture was a mere TJS 35 somoni (USD 11), as against TJS 156 (USD 50) in the non-agricultural private sector (IMF 2005, p. 23). The rather weak recovery of the agricultural sector so far has largely been driven by crops other than cotton. The development of cotton, as well as of livestock, has been rather dismal. This development is reflected in the regional pattern of rural poverty. The highest incidences of rural poverty are found in the cotton growing areas (Khatlon) and in mountains (GBAO), while the fastest reduction and lowest incidence of poverty is registered in the Rayons of Republican Subordination (World Bank 2005c, p. 6).

[26] In reality the importance of agriculture as a source of incomes and employment is likely to be somewhat smaller due to underestimation of the importance of overseas labour migration. The figures would seem to refer to 2004.

Table 5.3: Comparisons of agricultural productivity between countries.

	Value added/ha (arable), USD[a]	Arable land/ capita[b]	% arable land, irrigated[b]	Fertiliser use, kg/ha arable land	Wheat yield,[c] ton/ha	Cotton yield,[c] ton/ha	Average real GDP growth[d] (%)
Armenia	1,126	0.16	50.2	157	2.19	n.a.	9.9
Azerbaijan	484	0.22	72.6	63	2.58	1.52	10.4
Uzbekistan	651	0.18	88.7	1,614	3.72	2.27	2.9
Kyrgistan	411	0.27	75.6	208	2.37	2.63	3.4
Tajikistan	350	0.21	68.0	175	1.87	1.91	9.6
EU-15	n.a.	0.21	19.8	2,032	5.55	3.13	n.a

[a] Data for 2002; [b] Data for 2004; [c] Average for 2002–2004; [d]Average for 2000–2004.

Sources: World Bank Indicators (value-added USD); FAOSTAT Agriculture; IMF (2005); World Bank (2006b).

The role of the agricultural sector remains far below its potential, both as a source of employment and incomes and with regard to its contribution to the overall economic development of Tajikistan. The extremely low returns to labour in agriculture is also a major reason behind the large-scale overseas migration to Russia for work, which in its turn has left the agricultural sector bereft of male labour in parts of the country. The dismal situation in agriculture is well-documented, as are its causes (for a recent, comprehensive analysis, see World Bank 2006b). These may usefully be divided into three main categories: (i) problems related to a failure to establish a sound basis for a market-oriented agriculture, (ii) problems due to poorly functioning markets and (iii) problems specific to the cotton sector.

The failure to establish a sound basis for a market-oriented agriculture. De-collectivisation was initiated already in 1992, with the aim to privatise the state and collective farms by breaking them into smaller, collective *dehqon* farms and conferring user rights on the owners. The scope of the reform was extended in 1996 to allow individuals and groups to assume controll over their land share, break out of the collective *dehqon* farms and set up their own.[27] Both the scope and the implementation of the reform has been half-hearted. Implementation was very slow until 2004, in part due to the civil war, but also to limited commitment and institutional capacity. More importantly, the reform has so far fallen far short of a full fledged privatisation.

- The emphasis has been on issuing Land Share Certificates, which simply recognises the right to a share of the land without specifying the actual land, rather than on issuing land use titles.[28]
- The land use rights are very insecure. Vaguely worded legislation give local and central authorities wide discretionary power to confiscate land in the event that it is used "irrationally".
- The vaguely worded legislation, together with abuse of power positions lead to discrimination of disadvantaged groups and especially women.

[27] For a description of the reform see World Bank (2006b) and Porteous (2003).

[28] By January 2006 som 615,225 land share certificates had been issued, but only 27,294 land use titles (World Bank 2006b, p. 18).

– Local governments continue to lay down compulsory production targets, in particular for cotton. Private farmers are thus deprived of the right to decide over the use of their land.
– The process of obtaining land use titles – as a basis for setting up a private farm – is complex, non-transparent and costly.
– Access to information among farmers about the legislation, procedures for obtaining land use titles and about their rights remains very poor.

The cumbersome and costly process of obtaining land use titles together with the poor security that these titles confer reduce the incentives farmers to break out of the collective *dehqon* farms and set up their own farms. In addition, a practice whereby a share of the debts accumulated by the collective farm is passed on to the newly established firms as part of the decollectivisation process, acts as an additional strong disincentive as many collective farms are heavily indebted.

Still, the establishment of private farms based on land use titles has increased rapidly in the past few years from a very low level. However, this new emerging category of private farmers seems to be dominated by comparatively wealthy and politically well-connected individuals, who are well-informed about the privatisation process and able to take advantage of its lack of transparency and grab the most productive land. Indeed, a recent World Bank (2006b, p. 19) report concludes that there is a risk that collective *dehqon* farms will become centres of poverty, left behind by the more wealthy and well-connected farmers who have established their own farms and who have often acquired the best land in the process. The fact that the proportion of *dehqon* headed by women is low, only 6.8 per cent of total registered farms in 2004 confirms the picture that disadvantaged groups are excluded from privatisation (ADB 2006). When women do access land it tends to be land far from irrigation facilities or of marginal quality (Sabates-Wheeler 2002).

By way of summing up, it is clear that the ambiguous scope of the land reform and the half-hearted manner in which it has so far been implemented, implies that only very limited progress has been made towards the establishment of a sound basis for a market-oriented agriculture. Furthermore, the manner in which the reform is being implemented implies that village elites of well-connected and well-informed households benefit unproportionally at the expense of all others. Thus, there is a risk that Tajikistan will end up with a highly unequal land distribution and that rural inequality will deepen and become entrenched.

Problems related to poorly functioning markets. The still very early stage of development of the market economy is reflected in poorly functioning and fragmented markets for agricultural inputs and outputs, a general shortage of extension and support services, poor access to credits and in high transaction costs more generally. All of these factors constrain in one way or another the development of the agricultural sector. Some of these constraints are of a developmental nature – teething problems in a nascent market economy – that are likely to diminish over time as markets become more developed and sophisticated. In the meantime, government interventions may be called for to mitigate the consequences of such market imperfections and to nurture the development of functioning markets. Yet other constraints are of a structural nature and require direct government interventions or changes in government policies. Lastly, there are areas where the government needs to step in to produce public goods.

Use of farm inputs remains not only well below pre-independence levels, but also low compared to the situation in other countries in the region. A regression into subsistence farming and problems of producing for the market, discussed above, offers a partial explanation behind the low use of inputs, as do problems of access to inputs. The past system of furnishing agriculture with inputs, which was based on centrally planned allocation to comparatively few large agricultural units, has become both irrelevant and defunct. It needs to be replaced by a market based system geared towards meeting the needs of a large number of small private farms. The development of such a system is still in its infancy. However, the problem of poor access to farm inputs also has important structural components. At present the whole supply chain of inputs to agriculture is controlled by local or state monopolies. Local monopolies control the retail of fertilisers and other farm inputs and are almost exclusively geared towards furnishing the cotton sector with inputs at the expense of other crops. The state retains a monopoly on seed breeding. There is a need for a diversification of the sources of seeds, including import, and for more modern systems for seed testing and quality control.

The system for provision of credits to agriculture also remains poorly developed, reflecting the still poorly developed financial sector in Tajikistan generally, but also a strong urban orientation.[29] Access to seasonal credits to fund cash inputs and to bridge pre-harvest cash needs is extremely limited outside the cotton sector. The micro-finance sector has been growing rapidly, but does not really offer an adequate substitute for other sources of rural credits.[30] Development of rural credits will need to go hand in hand with an intensification and increased market-orientation of agriculture as access to seasonal credits is a prerequisite for increased use of cash inputs.

The overall situation of having access to credits, inputs, markets and support is even worse for women. Not only do 27 per cent more women work in the agricultural sector, but they also rely more for survival on produce from personal land plots (Hotkina and Rabieva 2003). Despite this it was found in a recent study by ADB that none of the women *dehqon* farm leaders had received credit from a bank and that all had experienced greater difficulties than men in accessing agricultural equipment, having it repaired, seeing agricultural specialists and received less support from other official structures, for instance, local government (ADB 2006). These are very serious findings as female headed households are typically among the poorest and as women's responsibility in agricultural work has increased and changed as a consequence of the migration of male labour abroad for work. If the means to undertake agricultural activities are not there or the transaction cost too high agricultural will become even more inefficient, with even larger negative effects on sustainable land management.

The shift from centrally planned large scale agriculture to market oriented small scale private farming implies a need for an entirely new system of extension services. The need for such a system is further underscored by the fact that many of the new farm holders have little prior experience of managing and running a farm on their own. The government needs to play an active role in the development of such a system. Even if some extension services can be provided against a fee, it

[29] In 2005 the loan to GDP ratio of the commercial banking sector was only 4.5 per cent and less than 10 per cent of the loans went to agriculture (World Bank 2006b, p. 21).

[30] The micro-finance niche is very small loans at comparatively high interest rates.

is unrealistic to leave the development of an adequate system of extension services entirely to the market.

Similar support needs to be provided to rehabilitate and adapt the current and heavily run-down irrigation and drainage systems to fit the new situation and tomorrows needs. Since modernisation of the water sector needs to be a mix of technological, managerial and institutional upgrading that both respond to stakeholders needs and integrate hydro-power, international relations, livestock, forest and environmental management it is necessary that government assume responsibility for the main infrastructure. The end result must, however, be that water as an input in agricultural production is not an open access resource as was the case during the Soviet era. Some sort of pricing of water must be applied both as a mean to affect consumption behaviour, which prior to independence was characterised by intense over-use, and secondly to provide funds for maintenance. It has been estimated that only about 4.5–7.6 per cent of the true cost of water for irrigation is secured (Table 5.4). Due to the long history of unrestricted over-use of water and poor drainage, soils have been eroded or salinised. One extreme example is the Yavan valley irrigation scheme where one fifth of the land can not be used because of erosion (UNECE 2004).

Table 5.4: True cost of irrigation and actual cost recovery, 2002–2004.

	2002	2003	2004
Running costs payments (USD, million)	1.7	1.7	0.2
Maintenance cost payments (USD, million)	1.0	1.8	2.6
Calculated true cost (USD, million)	60.4	65.6	67.5
Fees as% of true costs	4.5	5.3	7.6

Source: Umarov (2006).

Soil erosion and landslides are significant problems and restrictions for a productive and growing agriculture. Farmers are using marginal land and non sustainable techniques such as unregulated ploughing of steeply sloping pastures. A more efficient agriculture with an improved economy is likely to have a positive impact on soil and land management since unsustainable behaviour are concomitant of a local population facing severe economic hardship aggravated by the reduced state support, the insecure property rights and the large migration.

The cotton sector: a quagmire. Cotton is by far the most important cash crop in the Tajik agriculture. It accounts for more than a third of the cultivated area and is an important earner of export income. It is the dominant crop in large parts of the country, notably in Khatlon and Sughd. The development of cotton production has been disappointed. Production and yields have stagnated at a low level and the role of cotton cultivation as a source of employment and incomes is dismal and far below its potential. Indeed, rural poverty in Khatlon, where cotton is the predominating crop, is considerably higher than the national average and while rural poverty has fallen considerably in most parts of the country it has remained resilient in Khatlon.

The cotton sector is in a deep crisis. The problems here epitomises the problems of the agricultural sector more generally, but also contains some distinct features. It is to a large extent controlled by local monopolies, so called futurists, who in their turn are dependent on a single foreign firm – P. Reinhart – for overseas markets and for credits. These

local companies act as monopoly suppliers of inputs and credits to farmers and as monopoly buyers of the raw cotton. By overcharging for inputs and credits and underpaying for the cotton fiber, producer margins are squeezed to the point where it becomes impossible for them to make ends meet even during "good years". Unable to service credits received on onerous terms from the futurists, farms have become caught in a debt trap. By 2006 the accumulated debts of the cotton growing farms amounted to an estimated USD 280 million and had reached a point where it paralysed the cotton sector and imposed an absolute constraint on privatisation, further structural reforms and on investments. The hands of the cotton farmers are further tied by "'production plans" laid down by local authorities, whereby the farmers are forced to allocate some 70 per cent of their land for cotton production. Farmers who fail to comply risk having their land confiscated.

5.3 Market integration – "the division of labour is limited by the extent of the market"

The inability of agriculture, as a vocation and as an income generating activity, to move beyond the practices inherited from Tajikistan's centrally planned past and to allow for household strategies that are not primarily geared to on-farm consumption needs is in part also influenced by the demand side. Without an apparent or potential demand, there are few incentives or possibilities to move to non-farm activities. This is true both of product markets and the scope for taking up non-farm jobs locally. The entreprising drive that is clearly visible in the migration streams to external labour markets indicates that it is not primarily a lack of willingness or unfortunate individual characteristics that inhibit entrepreneurial activities more generally.

To a considerable degree, these inhibiting features are associated with the factors that were discussed at the beginning of this chapter, but it is also important to note that market fragmentation may also play a part. For, although badly intregrated markets may serve as a shield of protection for many businesses simply by viture of keeping competitors out and local demand in, it also adds to costs. These costs include those for conducting business, but also costs for consumers in the form of higher prices and a lower range of suppliers to choos from.

Businesses that may find the lack of competition a blessing at the initial stages of establishment and growth – and there is no denying that this may prove critically important to the survival of new start-ups – are soon also likely to find demand in small, shallow and local market saturated. Meanwhile, new local competitors attracted by the prospects for earning a living may try, in what may amounts to little else than herding behaviour, to enter a line of business which at the outset seemed a promising proposition.

However, the risk of saturated local markets is not an issue for non-farm activities alone. Downstream linkages from agriculture in the form of agro-processing and distribution facilities are very poorly developed and markets for agricultural products also tend to be geographically fragmented. The fact that some segments of the market for agricultural produce are a few priviledged buyers adds to the difficulties experienced. Thus, even minor changes in supply and demand can have a major effect on prices locally. The benefits to producers of increases in production risk being lost as increased supply on local markets immediately translates into lower prices. A lack of secure market outlets also reduces the incentives to invest in agriculture generally.

Although the supply response in agriculture is probably as much a regulatory and policy issue – the discussion in the previous section suggests as much – reduced trade and transportation costs, or reduced transaction costs more generally, can be an answer to some of the problems identified as a result of small, local markets. The provision of better transport and communication infrastructure may be part of the solution, but also the efforts to open the economy to trade with neighbouring countries can provided opportunties for output expansion and, as importantly, new opportunities to specialise. As Adam Smith already remarked, productivity is important for the general welfare, and productivity is enhanced by specialisation, which in turn however hinges on the extent of the market.

5.4 Migration investment climate

A decision to migrate abroad to work can be regarded as an investment decision. For the individual or household concerned, migration for work abroad implies costs and risks, which must be weighted against the prospects of improved incomes, much like a decision to invest in an enterprise. The costs and risks involved can vary greatly depending on access to legal migration channels, access to information and formal costs such as for transport, visa, fees, and so forth. The expected return on investment will obviously depend on differences in wage levels between the source and the destination country, but also on the position of and legal protection of the migrant worker at the destination.

Migration to work outside Tajikistan is not a new phenomenon. During the times of the Soviet Union the migration of Tajiks to other republics within the Union for education and work was common. Most men also did their military service in other parts of the Soviet Union. After the collapse of the Soviet Union this migration, which had been domestic, became international. Familiarity with Russia, widespread knowledge of Russian and visa free access to Russia have contributed to making the barriers to migration for work in Russia comparatively low. Yet, it has not been without risks, as most migrants are considered illegal in the sense that they lack necessary work and residence permits. Migration since independence has taken two distinct forms: (i) an exodus of non-ethnic Tajiks during the first few years immediately after independence and (ii) temporary or seasonal migration of primarily ethnic Tajik labour, which has increased to become a large scale phenomenon in the past decade. At present, it is estimated that some 600,000 – 800,000 Tajiks work abroad on a temporary or seasonal basis.[31]

Table 5.5: Private investments: domestic and in migration, 2005.

	Million USD	As% of GDP
Domestic private investments	138	5.9
Investments in migration overseas	246	10.5
Total private investments	384	16.4

Sourcse: World Bank (2005a), p. 60; IMF (2006), p. 24; SSC (2007), p. 205.

Remarks: Domestic private investments refer to 2005. Authors' calculations of investments in migration are based on USD 410 per investment decision (transport USD 330 bribes and other fixed costs USD 80; World Bank, 2005, p. 60) and an estimated 600,000 migration decisions per year.

[31] For a discussion see Chapter 4.

Most of the migration for work in Russia is of a temporary nature. The average length of stay is around nine months, after which around three months are spent at home. Migrants typically leave for Russia in early spring and return late autumn, as job opportunities in Russia decline during winter time (World Bank, 2005a, p. 59).

According to a survey in 2004 the fixed costs of an investment to migrate for work in Russia averages USD 410. Assuming some 600,000 migration decisions per year, the total investments in migration for work abroad can be estimated to almost USD 250 million per year, to be compared with a mere USD 134 million in domestic private investments (Table 5.5). Given that investments in migration to a large extent is a substitute for investing in productive activities at home, it can be argued that the quarter of a billion US dollars invested yearly in migration abroad can be seen as foregone domestic private investments. The low levels of domestic private savings and investments, identified as a major constraint to high future economic growth earlier in this study, appear in a totally different light when investments in migration and the savings accumulated to make these investments possible are added to the equation. Thus, total private investments, including investments in migration, increases to a respectable 16.4 per cent of GDP, of which domestic private investments is only a minor share (5.9 per cent of GDP) (Table 4.4). Similarly, the rate of domestic private savings increases from a mere 6.6 per cent of GDP to 17 per cent of GDP if savings spent on migration investments are added.

As discussed in Chapter 4, the returns to investments in migration can be quite substantial. The average wage obtained by a migrant Tajik worker in Russia is reportedly around USD 300 per month, which is roughly ten times the earnings that can be obtained from similar work at home. Even after deducting higher living expenses, the fixed costs of migration and other extra costs, the private return net to an investment in migration to work nine months in Russia can be estimated to be about USD 1,350 or USD 150 per month.[32] When cast against of an alternative income of perhaps no more than USD 300 for the same period at home, the attractiveness of migration becomes obvious. However, migration also entails substantial non-economic costs related not least to the emotional and social consequences of long term geographical separation of families.

Migration decisions are also associated with considerable risks. Most of the migration is irregular in the sense that the migrants lack the necessary work and residence permits. They are deprived of basic civil and worker rights and are an easy pray for various forms of irregular and exploitative practices by employers and officials (for a detailed review see Olimova and Bosc 2003). As irregular migrants, they are largely confined to jobs that are dirty, dangerous and disliked. They typically have to work exceedingly long hours under poor and often dangerous conditions. Health related work hazards are common, as are work accidents. Wages are often paid with long delays and all too frequently workers are cheated on part or all of their pay.[33] Lack of legal status and protection also makes the migrants very vulnerable to rent-seeking by corrupt government officials. A survey in 2004 found that migrants spent on average USD 165 on bribes and various unspecified fees. Traders are especially exposed to over-zealous customs controls and the risk of theft

[32] For calculations, see World Bank (2005a), p. 60; also IMF (2005), p. 54.

[33] A major migration survey in 2002 found that half of the migrants working as hired workers had to wait two to six months to get paid, while some 20 per cent were paid too little or not at all (Olimova and Bosc 2003, p. 39).

or illegal confiscation of assets while in transit is considerable, not least for those travelling through Uzbekistan.

Migrants counter these risks mainly through networking and through risk sharing arrangements. Networks are important as sources of information about possibilities and conditions of work abroad as well as for finding and securing work and housing abroad and for mutual provision of social and economic security. Tight-knit local communities at home – *avlod* – facilitate migration through risk sharing and by looking after the social needs as well as the need for labour to work in agriculture of the households where the husband has migrated (for a discussion, see Olimova and Bosc 2003).

There remains ample scope for improving the "migration climate" by reducing the costs and, in particular, the risks associated with migration decisions. Some such measures can be undertaken by Tajikistan unilaterally, but most would require cooperation with the countries of destination and transit countries.

In an effort to regularise, control and curb labour migration, Russia recently took a decision to introduce quotas for temporary labour migration to Russia. Tajikistan will reportedly get a quota of 600,000 migrant workers. If implemented, this would represent a major step forward towards securing rights and protection of Tajik workers in Russia. Much can also be done to reduce the costs and risks of the actual migration to and from the country of destination. The pugnacious behaviour of representatives of various Uzbek authorities towards Tajik citizens in transit may be beyond the control of Tajik authorities, but rent-seeking and predatory behaviour of individual Tajik government officials is certainly within the realm of Tajik authorities to control.

The cost of remitting money through the bank system has been reduced and a tax on remittances has been abolished, resulted in a dramatic increase in the amounts remitted through official channels, with clear benefits to the migrants both in terms of cost and the risks associated with carrying large amount of cash in person. Air travel is pointed out as another area where costs might be cut.

The function of informal network as social and economic safety nets would need to be complemented by improved formal support services to migrants, such as extended consular services and information and support services especially geared towards migrant workers.

6. Binding constraints

Tajikistan has by all accounts made quite a comeback after years of civil strife. Over the past decade, the contraction of the economy under the double burden of conflict and the collapse of the long-established Soviet system of central planning has been brought to a halt. Instead, political conditions have stabilised and peace and policy combined have been instrumental in providing a setting that has been conducive to promoting development. As a result, economic growth has resumed. By any recogning, figures are quite impressive, and for a while during the opening years of the new millennium GDP growth moved into double digits. Although now somewhat lower, at 6–8 per cent a year, they must still be considered high. In addition to macro-economic stability, which has been achieved not without effort and pain, the sources of this growth includes the reallocation of resources from low to higher productivity activites, in fact the very mobilisation of resources as exist to start with. Similarly, forced migration and internal displacement have given way to more orderly labour migration to other parts of the CIS, in the process generating sizeable incomes for Tajikistan and its citizens in the form of remittances.

Indeed, the flow of remittances are of such a magnitude that its very size relative GDP might become a problem. Conservative estimates would put the volume of money remitted to Tajikistan at about one-fifth of GDP, arguably more realistic figures indicate an inflow twice that size. Likewise, the number of individuals directly involved are staggering and make up a very large share of the working age population of the country. The number of households and individuals back home that benefit from, at times critically depend on, funds remitted home by labour migrants is substantial both in absolute and relative terms. The gains from labour migration do not come for free, however, and in addition to the risks involved and the presumably very high non-economic costs of sending family members abroad, money outlays required to put migrants in a position where they can earn an income and contribute to household budgets are very high. Calculations presented in Chapter 5 above indicate that the resources thus committed are not unimportant: investment in migration is more than twice the size of domestic investment by private sector actors and, if regarded as a form of savings, would similarly more than double the current private savings rate.

The implication of these observations, and despite the fact that a majority of the Tajik population is still classified as poor, is that it is

difficult to argue that in the aggregate the economy suffers from a demand constraint. The high level of under-utilisation of labour (or human capital more generally) that is plain to see is rather the result of other factors. At its most general, a lack of supply response to the high level of demand can be observed. There is little expansion in manufacturing and services tend to be consumer rather than business oriented, indeed services in general and consumer services in particular focus on those type of services that are distinctly non-tradable. This is seen in the high level of imports of basic consumer goods and the absence of a domestic output expansion in sectors other than consumer services. Instead, the inability of a rapidly increasing volume of consumer spending to induce employment growth was to a considerable degree found to be consequence of a deficient business environment that does not encourage entrepreneurship and an expansion of businesses.

The present dynamic economic development, the release of previous demand constraints on growth as well as the establishment of peace and security and macro-economic stability offer a possibility and a momentum for shifting the focus from solving short term problems and from crisis management to more strategic planning aimed at laying the foundations for high and sustainable pro-poor growth. To this end, a bundle of binding constraints of both immediate and more long term nature must be addressed. The present study results in the identification of two acute binding constraints, related to the establishment of (i) a sound basis for market oriented agriculture (Section 6.1 below) and (ii) an enabling environment for non-farm private sector development (Section 6.2), and three binding constraints of a more long term nature, which while not necessarily acute today still needs to be addressed now in order to prevent them from becoming severe binding constraints in the years to come. These are (i) investments in human capital formation (Section 6.3), (ii) reversing the trend of erosion of natural resources and environmental deterioration (Section 6.4), and (iii) preventing inter-generational poverty (Section 6.5).

6.1 The need to establish a sound basis for a market oriented and dynamic agricultural sector

As outlined above, in Chapter 5, the critical situation in agriculture is well-documented, as are its causes (for a recent comprehensive analysis, see World Bank 2006b). They may usefully be divided into three main categories. Problems related to a failure to establish a sound basis for a market oriented agriculture, problems due to poorly functioning markets and problems specific to the cotton sector.

The failure to establish a sound basis for a market-oriented agriculture. The land reform initiated already in 1992 has suffered from a ambivalence and a reluctance to make a the full leap to a market oriented agriculture based on secure and private property and/or user rights to land. For the individual farm household, the procedure for obtaining own land is cumbersome, non-transparent and expensive. As a consequence of lack of information and difficult and costly procedures 'the second phase of privatization has (thus) been dominated by wealthier, polically well-connected individuals and families who are well-informed about the privatisation process, and are able to take advantage of its lack of transparency' (World Bank 2006b, p. viii).

Private property rights are very insecure. The property rights associated with the land use rights are undermined by 'vaguely worded legislation which gives wide discretionary powers to state and local government

to confiscate agricultural land in the event that it is used "irrationally" ' (World Bank 2006b, p. 18). Farmers are also deprived of the right to decide how to make the best use of their land as targets regarding the share of the land that should be devoted to cotton cultivation are established by the authorities; farm households that fail to comply risk loosing their land. Thus the newly established private farms lack both the freedom and the incentives to maximise the returns from agriculture, to invest capital and labour with a view to increasing these returns in coming years. At a more aggregate level, the development of a market based agriculture, which is an absolute precondition for a dynamic development, is severely constrained.

Poorly functioning markets also impose constraints on the development of agriculture. Downstream linkages from agriculture in the form of agro-processing and distribution facilities are very poorly developed and markets for agricultural products also tend to be geographically fragmented. Thus, even minor changes in supply and demand can have a major effect on prices locally. The benefits to producers of increases in production risk being lost as the increased supply on local markets immediately translate into lower prices. A lack of secure market outlets at predictable prices also reduces the incentives to invest in agriculture generally. There are similar problems at the supply end of agriculture. The previous system of extension services, which was geared to serve large scale state and collective farms, has yet to be replaced by a system that effectively caters to the needs of the large number of new and small private farms. The situation is much the same with regard to availability and access to other farm inputs, such as seeds, fertilisers, and so forth. Outside the cotton sector, access to agricultural credits is also severely limited.

Specific problems in the cotton sector. The situation in the cotton sector is particularly acute. It is to a large extent controlled by local monopolies, so called futurists, who act as monopoly suppliers of inputs and credits to the farmers and as monopoly buyers of the raw cotton. By overcharging for inputs and credits and underpaying for the cotton crop, producer margins are squeezed to the point where it has become impossible for farmers to make ends meet even during "good years". As a consequence production suffers and the cotton sector has become a poverty trap rather than a source of improved employment and incomes and a contributor to the country's economic development. At the same time, farm debts to, primarily, the futures companies have accumulated to the point where they have become totally unsustainable.

Out of this bundle of constraints on enhancing the role of agriculture as a source of employment and incomes and as a dynamic sector in the national economy, two core binding constraints may perhaps be identified.

First, the lack of comprehensive and secure property and user rights to land stands out as a fundamental binding constraint. Unless this constraint is removed, other measures aimed at the development of the agricultural sector are likely to prove largely ineffective. Comprehensive and secure property and user right – including the obvious right to choose what to grow, from whom to buy and to whom to sell – would also be a fundamental and necessary step towards solving the quagmire in the cotton sector.

Second, the problem of the debt-ridden farms, particularly in the cotton sector, also needs to be solved. The Government is presently working with the donor community on a solution to this problem. It is clear that most of these debt are bad, in the sense that the borrowers lack the

ability to service, let alone repay them. It is also clear that many of them rest on dubious legal grounds and might not hold up in a court of law. Hence, it is important that the debts are discounted down to their actual market value before any settlement process begins. Once, but only when and if, this has been achieved, measures should be considered whereby the government assisted by the donor community bail out the indebted farm households. At the same time the practice whereby a share of the debts accumulated by collective farms in the past is shifted over to newly established private farms as part of the decollectivisation process should be discontinued and corrected retroactively. Being laden with debts from the outset severely undermines the ability of the newly established private farms to develop and prosper. The practice of forcing new farms to inherit old debts is clearly detrimental to pro-poor growth and poverty reduction and to a sustainable and dynamic development of the agricultural sector more generally.

Other constraints to pro-poor growth in agriculture will no doubt also need to be addressed. Even if a good foundation for a market based agriculture are put in place, pro-active measures will be needed to overcome the constraints imposed by poorly functioning markets. The government have an obvious role to play in the provision of extension services and can also play an active role in fostering market based upstream and downstream linkages to a and from agriculture. Additional measure – beyond establishing secure property rights and solving the problem of debts – are also likely to be needed in the cotton sector to release the present stranglehold of the so called futures companies (at times in liaison with local governments) on the farm households. However, such measures will probably be of little avail unless the two fundamental constraints identified and discussed above are released.

6.2 Creating enabling conditions for private sector development

Equally important, and as far as individual and family *dehqon* farms are concerned in part overlapping, is the need to create conditions conducive for private sector growth. In particular small and medium sized enterprises are an important vehicle for self-employment and the generation of jobs for those who lack the means, drive and competences needed to run businesses on their own. And as also larger enterprises typically start out small it is important to provide a business environment that allows both for the establishment of new ventures and the expansion of existing ones.

Investments in the this sector is hampered by a lack of access to formal finance, but over time this particular constraint appears to have become somewhat less burdensome while obstacles of other sorts such as inspections, both formal and informal fees, permits and licensing requirements remain as much a headache as was the case a few years back. The time spent on catering to the demands of the regulatory framework and actions on part of the authorities to ensure compliance is in itself quite a burden on business activities, but so are the possibilities for rent-seeking that this current set-up currently provides. As also the accessing to, for instance, financial resources are also often accompanied by unofficial demands for the payment of additional fees, it fosters arbitrariness and increases the cost of doing business. By the nature of things, it might well weigh the most heavily on SMEs, while larger entities are better able to stand up against the threats that such fraudulent behaviour implies.

As a consequence, the World Bank and the IFC have argued strongly in favour of further deregulation and the removal of a considerable part

of the regulatory framework that supports activities that service few purposes other than harassing business proprietors (e.g., IFC 2004, World Bank 2005a). A measure of success in this endeavour is likely to reduce the costs of doing business while it opens up better prospects for earning a return that can match the perceived potential incomes form labour migration. Only when this is achieved are Tajik households more likely to invest their money in the private business sector than in sending members of their family abroad.

To achieve this end, also the improved provision of infrastructure and various public goods, such as dependable and impartial judicial and police services, are likely to be needed in addition to setting sight on the directly improductive consequences of the regulatory system as described above. Anything that allows for arbitrary and therefore both unfair and unpredictable action on part of authorities that are to be the arbiter of the rules is likely to tilt the playing field in all but the direction of becoming more straight and level.

In this connection it should be noted that any set of regulation of markets – and it is very difficult to conceive of well-functioning markets without formal or informal institutions (i.e., laws, other rules and norms) to support them – will have implications for the cost of operating in the market. It will have an impact on the structure of transaction costs that traders and producers meet, and it will influence the structure of incentives that will in turn will prove decisive to their decision to engage in productive activities. The nature of these rules, irrespective of whether they issue from legislative acts or informal norms, will also determine whether productive or improductive, indeed perhaps outright destructive, entrepreneurship will prevail as the economist William Baumol famously noted. Tajikistan should decidedly aim for the first mentioned type, that of productive entrepreneurship, else its efforts at achieving higher levels of development and a higher standard of living for its citizens will make few strides forward.

6.3 Investing in human capital formation through education

There are also a number of constraints that, unless addressed, will pose a threat to the long term viability of Tajikistani economic growth and development. Unlike those that relate to agriculture and private sector development, which have to be addressed here and now, the rather slow process of erosion of human capital may induce a measure of complacency. Indeed, a further deterioration of educational and health standards may not have an immediate impact on economic progress. However, unlike private sector development, be it in agriculture or in the non-agricultural sector, one of the problems of human capital formation is that any positive effect that may accrue as a result of measures taken are also in a sense long-term: they typically do not materialise immediately. Concerted action may therefore be essential today to achieve the desired results half a generation from now.

It is against this background that enrolment at levels that are not fully commensurate with the requirements of compulsory schooling and/or those achieved historically become a source of concern. A drop in attendance, most visible among girls who might otherwise have attended instruction at the secondary level, has been registered. Although not equally obviously skewed by gender, also at the primary school level enrolment suffers from non-attendance by about one in ten of those eligible.

Whatever the reasons behind such levels, which are, it might be argued, undesirable but not necessarily alarming, it is in fact a major problem both

in view of the effects on inter-generational poverty and in view of the rapidly increasing demands put on the Tajik labour force. In the former case, poverty traps may easily develop (on which more below), in the latter it is an issue that has to be resolved if current levels of economic growth are to be achieved also in the future. For, although access to an external labour market has proved a blessing, it is not an undiluted one.

Above all, the sheer volume of money remitted home translates into a reduced supply of labour – the more money sent home, the more rewarding labour migration may seem – and demands for a more productive workforce simply to keep up with the rising costs of recruiting labour at home. The external labour market is an obvious point of reference and an alternative source of job opportunities, in effect creating a wage floor at home below which the supply of labour dries up. Anecdotal evidence already speaks of bottlenecks in the form of a shortage of qualified people willing to work at the prevailing rates, creating further up-ward pressure on wages, in the process adding to inflationary pressures in the economy.

Another dimension and a major concern is the low level of public investment and spending on education, which translates into poor physical conditions of school and under-paid teachers. This, in its turn, results in a poor quality and relevance of the instruction offered. It is also likely to negatively affect the perceived status of public education, perhaps education as such. This is not what is needed at a point in time when there is backlog of some magnitude to make up for and when both more appropriate types of training and increased levels of qualification amongst those who leave school is the only way to counter the negative effects of low levels of income at home and the existence of a readily available (if unpredictable) external option. 'The low wages of the teachers and the poverty of the teaching environment, including the lack of adequate infrastructure and equipment and of appropriate teaching aids and updated tools for the transmission of knowledge, lead many teachers to feel that they are being neglected by the Government and are not respected by society' (UNICEF 2004, p. 8).

6.4 Reversing environmental degradation and the erosion of natural resources

Improper management of Tajikistan's greatest capital, water, will have both short and long term implications for pro-poor growth. All water infrastructures, whether for supply and sanitation, irrigation or flood protection, is in poor condition. Distribution efficiency for irrigation is only 50 per cent due to poor quality and inadequate irrigation systems and the efficacy of purification of water does not exceed 40 per cent. At the same time Governments anticipated investments in these areas are very small, only 3 per cent for water and sanitation (Table 4.8).

There are immediate constraints to pro-poor growth revealed in the alarming situation of increased numbers of waterborne diseases in the country (Table 4.7). Access to piped water has decreased but worse is that piped water does not guarantee safe drinking water. Poor people are provided with fewer alternatives and therefore more exposed to using contaminated water. They also suffer the consequences of a family member's illness more severely. The small margins and possible savings existing for this group is quickly consumed by recurrent illnesses and hospital bills.

In addition, ill-prioritised investments and lack of reforms in the water sector will also have significant long-term effects. Water and the manner by which it has been used and manipulated by the centrally

planned system has affected most areas of Tajikistan's economy and environment. Due to the regional specialisation of cotton farming during this period, other segment of the economy was sacrificed to sustain high cotton yields. More land was constantly brought into cultivation. The newer land was usually the least suitable for cotton growing. Soviet planners halted traditional rotation[34] and instead relied on endless amounts of fertilisers along with various pesticides and defoliants. Since the entire system of incentives was directed towards achieving higher and often unattainable targets the quality of the cotton declined by the 1980s as soils became exhausted and salinised (Weinthal 2002).

In decisions regarding water allocations Soviet planners rarely consulted the local water administrations or the farmers. In general, the individual farmers were completely disassociated from decision making. The farmers did not have to pay for water usage and lacked individual incentives to use water efficiently. In addition many of the canals were unlined and many of the irrigation systems lacked proper drainage networks. This led to the loss of large quantities of water through seepage and evaporation and contributed to water logging and salinization of the soil. Although the Soviet Union had some of the most stringent environmental regulations in the book they never enforced them. In fact, the institutional incentive structure of centralized planning generated a large of amount of environmental externalities, in the central Asian case especially related to water management, where the Aral Sea is probably the most frightening example.

This institutional heritage of managing natural resources together with an obsolete infrastructure is a great constraint to a well functioning, market based and sustainable economy. Investments in modernising the water infrastructure need to be accompanied by fiscal and institutional reforms to achieve the highest long term payoff. The current structure of service charges for water use does for example not provide the financial incentives to secure and use water rationally nor does it endure cost recovery for water services and maintenance. Similarly, the water emission charges and fines fail to reduce and prevent water pollution. To provide incentives that are conducive for sustainable pro-poor growth, modernisation of the water sector needs to be a mix of technological, managerial and institutional upgrading that respond to stakeholders needs and integrate irrigation needs, hydropower activities, international relations, livestock, forest and environmental management. For the agricultural sector this needs to be combined with the land reform to create secure land rights. Government need to resume great responsibility here.

The consequences of the above are accordingly already visible through reduced agricultural productivity, increased health problems and loss of ecological services. The adjusted net savings in Table 4.6. shows negative values since 2003. This means that the country's total wealth is declining. If Tajikistan continues to not invest or to make non-profitable investments or subscribes to policies that persistently lead to negative adjusted net savings the actual foundation for growth can be jeopardized in the long term. Water and natural resources is not only Tajikistan's greatest wealth but also it its greatest opportunity to achieve a sustainable and equal development.

[34] Even though the growing of cotton expanded in the mid-1800 farmers largely preserved their traditional pattern of rotation until the Soviet period. For example was alfalfa rotated with cotton and besides providing nutrients to the soil was used as fodder for livestock.

6.5 Preventing inter-generational poverty

The severe and widespread poverty that resulted from the economic collapses and political and social turmoil in the 1990s may largely be characterised as being of a transient nature. In contrast to the situation in most "traditional" developing countries it was not primarily due to any qualitative lack of human resources – viz. low levels of education and skills – but rather to a sudden lack of opportunities combined with much increased vulnerability. Thus, given opportunities and a basic security most people living in poverty would have the resources to lift themselves out of poverty again relatively quickly.[35] However, severe transient poverty may soon turn into chronic and inter-generational poverty as living in poverty erodes the human resources and deprives children and the young from building up the resources needed to permit a life without poverty in their future years. In other words, poverty may deprive the young generation of the education, health, nutrition and sanitary conditions necessary to make them equipped to prosper as adults. There is evidence that such a development is taking place in Tajikistan, which, if not reversed, may condemn large numbers of young people to a future life in poverty as well as impose a long-term binding constraint on pro-poor growth.

Chronic as well as acute malnourishment among young children is widespread in Tajikistan. Some 17 per cent of all children under the age of five suffer from acute malnourishment and four percent are severely malnourished.[36] Chronic malnourishment is even more widespread. Well over a quarter of all children are stunted and almost one in ten suffer from severe stunting.[37] Malnourishment is primarily a consequence of material poverty. It is much more widespread among the poorest households than among the relatively richer ones. However, even among the wealthiest 20 per cent of the households it is quite common.[38] The mother's education, which may be seen as a proxy of knowledge and awareness about nutritional needs, does not seem to exert any clear influence over the incidence of child malnutrition. This implies that malnourishment results from a lack of means rather than knowledge. Mother's education stands out as a much more important determinant of the chances of completing secondary education than the wealth status of the household, suggesting that in most instances it is not dire material needs that prevent completion of secondary education. The large gender discrepancy reinforces the impression that there are other factors at play. A qualitative survey of girls' education casts additional light on the issue (UNICEF 2004).

Sanitary conditions are also much worse among the poorer households than among the relatively richer ones. Less than half of the poorest quintile has access to an improved water source and some 70 per cent of this category use solid fuel for cooking, which is associated with a high risk of indoor air pollution. By contrast, virtually all of the richest 20 per cent of the households have access to an improved source of water and use other, less polluting, sources of fuel for cooking. By and large, the sanitary standards are also considerably higher in urban than in rural areas.

From the perspective of inter-generational poverty, the falling standards of education are particularly worrisome. Net enrolment in primary

---

[35] This is admittedly a simplification, as some resources, notably capital, were largely destroyed or made obsolete and needed to be recreated. However, capital can be much more quickly recreated than human resources.

[36] Measured as weight over height.

[37] Measured as height by age.

[38] Noted that wealth rather than income or per capita income was used to distinguish poorer from richer households. It would appear that this categorisation was not adjusted for the number of household members.

Table 6.1: Risk of intergenerational poverty by household income status and mother's education (percentages).

Indicator	Total	Wealth quintile		Mother's education		
		Lowest	Highest	Primary	Secondary	Higher
Malnourishment						
Wasting, moderate	17.3	22.4	13.7	13.4	18.1	12.4
Wasting, severe	3.6	4.7	2.5	4.5	4.3	1.0
Stunting, moderate	26.9	31.9	20.6	27.5	28.8	19.4
Stunting, severe	9.1	12.9	7.4	6.6	10.0	6.3
Education (net attendancy rates)						
Primary, boys	89.1	91.2	90.9	80.4	88.9	95.6
Primary, girls	88.2	89.6	92.7	66.8	88.7	96.5
Secondary, boys	88.0	86.0	93.2	73.3	87.8	96.2
Secondary, girls	72.7	68.7	81.5	46.1	74.0	93.1
Sanitation						
Improved water source	69.5	47.9	96.1	62.9	67.9	76.1
Solid fuel for cooking	35.0	70.5	1.4	42.4	40.1	24,3
Child labour						
Working children aged 5–14	12.2	14.9	9.7	12.6	12.9	10.0
Mortality						
Under 5 mortality (per 1000)	79	98 a)	57 b)	95	76	14

a) The figure refers to the poorest 60 per cent of the households

b) The figure refers to the richest 40 per cent of the households

Sources: SSC (2006); Baschieri and Falkingham (2007).

Remarks: Malnourishment refers to children under the age of five. Wasted is measured as weight for height and stunting as height for age. Sanitation refers to percentages of households (with children). Working children refers to children working outside the home (irrespective of hours worked) and/or those carrying out household chores for more than 28 hours per week.

education remains high for both boys and girls, though by no means universal. Enrolment rates in secondary education are less impressive and for girls they have become alarmingly low. While most boys still complete secondary education, large numbers of girls drop out after the age of 13–14 without completing secondary education. The reasons behind the falling levels of education in general and for girls in particular are complex. It was found that an absence among parents of professional and social ambitions for their daughters combined with a perceived low quality and relevance of the education were main factors behind withdrawing girls from school. This conclusion is congruent with the results of the 2005 Multiple Indicator Cluster Survey which showed that the chances that a girl, in particular, or a boy will complete secondary education are strongly and positively correlated by the level of education attained by the mother (Table 6.1). However, this does not imply that poverty has no bearing on the falling levels of education. Although there are no tuition fees, education brings direct costs for school books and other utensils. The opportunity cost may also be quite high as it reduces the scope of using children for work in or outside the household. This opportunity cost is likely to be particularly high in households where the husband has left to work abroad. Child labour is quite common, in

particular among the poorer households (Table 6.1). However, it would seem that in most instances such work is combined with attending school (Baschieri & Falkingham 2007, p. 94).

It must be concluded that preventing inter-generational poverty requires urgent attention. It requires investments in a variety of areas and forms in children that Tajikistan can ill afford to postpone. It must be emphasised that such measures should be seen as a necessary, and indeed an imperative, investment to secure a basis for sustainable pro-poor economic and social development that Tajikistan cannot afford not to make, rather than as "mere" social expenditures which will be made as and when the economy so permits.

References

Abou-Ali, H. and F. Carlsson (2004), *Evaluating the welfare effects of improved water quality using the choice experiment method* (Working Papers in Economics, 131. Department of Economics, Gothenburg University).

ADB (2004), *Country Environmental Analysis Tajikistan* (Manila: Asian Development Bank).

ADB (2006), *Tajikistan: Country Gender Assessment* (Manila: Asian Development Bank).

Baschieri, Angela and Jane Falkingham (2007), *Child Poverty in Tajikistan* (Dushanbe: UNICEF, Final draft).

CAMIN (2001), *National Strategy and Action Plan for Sustainable Mountain Area Development of Tajikistan* (Dushanbe: Tajik Working Group, Central Asian Mountain Information Network).

EBRD (2004), *Transition Report 2004* (London: European Bank for Reconstruction and Development).

EBRD (2005), *Transition Report 2005* (London: European Bank for Reconstruction and Development).

Falkingham, Jane and Angela Baschieri (2004), *Gender Differentials in Tajikistan: a Gendered Analysis of the 2003 Tajikistan Living Standards Measurement Survey* (Southampton Statistical Sciences Research Institute, Applications and Policy Working Paper, A04/20. Southampton: Univesity of Southampton).

Hotkina, Z. and G. Rabieva, eds., (2003), *Tajikistan: On the Way to Gender Equality. Dushanbe: United nations Development Programme* (Dushanbe: United Nations Populations Fund, United Nations Development Fund for Women and SCO).

IFC (2004), *Business Environment in Tajikistan as seen by Small and Medium Businesses* (Dushanbe: International Finance Corportation).

IFC (2006), 'Preliminary results of survey: Business environment as seen by SMEs in Tajikistan' (Dushanbe: International Finance Corporation).

IFC (2007), 'SME policy project Tajikistan. Meeting with Sida' (Dushanbe. International Finance Corporation, 6 February).

IMF (2005), *Republic of Tajikistan: Selected Issues and Statistical Appendix* (IMF Country Report, 056/131. Washington, DC: International Monetary Fund).

IMF (2006), *Republic of Tajikistan: Sixth Review Under the Poverty Reduction and Growth Facility. Staff Report; Staff Statement; Press Release on the Executive Board Discussion; and Statement by the Executive Director for the Republic of Tajikistan* (IMF Country Report, 06/62. Washington, DC: International Monetary Fund).

IMF (2007), *Republic of Tajikistan: 2006 Article IV Consultation – Staff Report; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for the Republic of Tajikistan* (IMF Country Report, 07/144. Washington, DC: International Monetary Fund).

Kireyev, Alexei (2006), *The Macroeconomics of Remittances: the Case of Tajikistan* (IMF Working Paper, WP/06/2. Washington, DC: International Monetary Fund, January).

Levine, Richard M. and Glenn J. Wallace (2000), 'The mineral industries of Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan', *Minerals Yearbook*, vol. III: *Area Reports -- International* (Washington, DC: US Geological Survey), pp. 3.1–3.48.

Levine, Richard M. and Glenn J. Wallace (2004), 'The Mineral Industry of the Commonwealth of the Independent States: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan', *Minerals Yearbook*, vol. III: *Area Reports -- International* (Washington, DC: US Geological Survey), pp. 7.1–7.55.

Lundström, Susanna and Per Ronnås (2006a), *Integrated Economic Analysis for Pro-Poor Growth* (Stockholm: Swedish International Development Cooperation Agency).

Lundström, Susanna and Per Ronnås (2006b), *Migration and Pro-Poor Growth in Albania – An Integrated Economic Analysis* (Country Economic Report, 2006:05. Stockholm: Swedish International Development Cooperation Agency).

Olimova, Saodat and Igor Bosc (2003), *Labour Migration from Tajikistan* (Dushanbe: International Organization for Migration).

Olson, Berry L., Jr., and D. Campbell (2003), 'Assessing the extent, cost and impact of land degradation at the national nevel: findings and lessons learnt from seven pilot countries', paper commissioned by the Global Mechanism of the UN Commission to Combat Desertification, Rome.

MNP (2000), *National action plan to combat desertification in Tajikistan* (Dushanbe: Ministry of Nature Protection and Committee on Land Resources and Land Management, Republic of Tajikistan).

Porteous, Obie (2003), *Land Reform in Tajikistan: From the Capital to the Cotton Fields* (Dushanbe: Action against Hunger)

Republic of Tajikistan (2003a), *Millennium Development Goal Report* (Dushanbe: Government of the Republic of Tajikistan).

Republic of Tajikistan (2003b), *First National Report on Biodiversity Conservation* (Dushanbe: Government of the Republic of Tajikistan).

Republic of Tajikistan (2005), *Poverty Reduction Strategy Paper: Second Progress Report* (Dushanbe: Government of the Republic of Tajikistan).

Republic of Tajikistan (2007), *Poverty Reduction Strategy of the Republic of Tajikistan for 2007–2009* (Dushanbe: Government of the Republic of Tajikistan. Draft English translation, March 2007).

Republican Sanitary-Epidemiological Service (2004), *Analysis of the Activity of the Republican Sanitary-Epidemiological Service in 2003* (Dushanbe: Republican Sanitary-Epidemiological Service).

Research Laboratory for Nature Protection (2003), *Tajikistan 2002. State of the Environment Report* (Dushanbe: Research Laboratory for Nature Protection. Electronic version, 3 March 2003. URL: http://enrin.grida.no/htmls/tadjik/soe2001/eng/).

Rowland, Richard H. (2005), 'National and regional population trends in Tajikistan: results from the recent census', *Eurasian Geography and Economics*, vol. 46 (3), pp. 202–223.

Sabates-Wheeler, R. (2002), *Land Rights and Economic Security for Rural Women in Tajikistan. Findings of a Rural Womens Needs Assessment, a Legislative Review and an Institutional Aassessment* (Dushanbe: United Nations Development Fund for Women).

SSC (2005a), *Socio-Economic Atlas of Tajikistan* (Dushanbe: State Statistical Committee of the Republic of Tajikistan).

SSC (2005b), *Analiticheskiy doklad po provedeniyo obsledovaniya rabochey cily v Tadzhikistane, iyul'-avgust 2004 goda* (Dushanbe: Gosudarstvennyy Komitet Statistiki Respubliki Tadzhikistan).

SSC (2006), *Findings from Tajikistan: Multiple Indicator Cluster Survey 2005. Preliminary Report* (Dushanbe: State Statistical Committee of the Republic of Tajikistan, October).

SSC (2007), *Tadzhikistan: 15 let gosudarstvennoy nezavisimosti. Statisticheskiy sbornik* (Dushanbe: Gosudarstvennyy Komitet Statistiki Respubliki Tadzhikistan).

Umarov, D.M. (2006), 'Voprosy sovershenstvovaniya platnogo vodopol'zovaniya v sel'skom chozyaystve Respubliki Tadzhikistan' [Problems of developing chargeable water use in agriculture of the Republic of Tajikistan], *Ekonomika Tadzhikistana: strategiya, razvitiya*, 2006:4, pp. 128–143.

UNECE (2004), *Environmental Performance Reviews: Tajikistan* (Environmental Performance Reviews Series, 21. New York: United Nations).

UNICEF (2004), *Qualitative Survey on Issues in Girls' Education in Tajikistan* (Dushanbe: Ministry of Education and UNICEF).

UNICEF (2006), *Basic Education Statistics: Tajikistan 2006* (New York: UNICEF, February. URL: http://www.childinfo.org/areas/education/pdfs/CEECIS_Tajikistan.pdf [accessed 17 April 2007]).

Weinthal, Erica (2002), *State Making and Environmental Cooperation, Linking Domestic and International Politics in Central Asia* (Cambridge, MA: MIT Press).

World Bank (2005a), *Tajikistan Trade Diagnostic Study* (Report 32603-TJ. Washington, DC: The World Bank).

World Bank (2005b), *Republic of Tajikistan Health Sector Note* (Report 29858-TJ. Washington, DC: The World Bank).

World Bank (2005c), *Republic of Tajikistan Poverty Assesssment Update* (Report 30853-TJ. Washington, DC: The World Bank).

World Bank (2006a), *The Little Green Data Book 2006* (Washington, DC: The World Bank)

World Bank (2006b), *Priorities for Sustainable Growth: A strategy for Agricultural Sector Development in Tajikistan* (Washington, DC: The World Bank).

World Bank (2006c), *Where is the Wealth of Nations? Measuring Capital for the 21st Century*. The (Washington, DC: The World Bank).

Zayonchkovskaya, Zhanna (2000), 'Recent migration trends in the Commonwealth of Independent States', *International Social Science Journal*, vol. 152, issue 165, pp. 343–355.

Appendix

Calculating Adjusted Net Savings

Definitions are adapted from World Bank (2006c) but adjusted to local conditions and particular observations made by the authors. It should be remembered that national data are often estimates and not always reliable.

Gross National Saving (% of GDP) figures are based on IMF estimates (IMF 2006) and State Statistical Committee of Tajikistan (SSC 2007). Estimates for 2006 are adopted from World Bank (2006).

Consumption of fixed capital (% of GDP). Depreciation of capital was not estimated during the Soviet period and has not yet been included in the national macro-economic statistics. Given the small investments for maintenance since independence for most of the country's stock of physical capital considerable depreciation has taken place. The estimate in the World Bank's *Little Green Data Book* is based on UN statistics. These estimates are considered as good as any, although they are probably underestimations.

Education expenditure (% of GDP). In the genuine savings estimate the education expenditure refers to public current operating expenditures in education, including wages and salaries and excluding capital investments in buildings and equipment. (United Nations Data are extrapolated from the most recent year available). Although, there is positive spending in education, Tajikistan is currently eroding its stock of human capital as described earlier to some extent in the text.

Energy depletion (% of GDP) is equal to the product of unit resource rent and the physical quantities of energy extracted. It covers crude oil, natural gas and coal. The number for 2005 was missing in the Green data book and therefore estimates from World Bank data and statistics was used (see www.worldbank.org/environment/data). Presumably it is carbon extraction that these numbers refer to. Production has declined from about 500,000 tons annually in 1990 to less than 20% of this amount by 2004. The numbers have, however, steadily increased since 1996 (Levine and Wallace 2000, 2004). The figures in the Green data book show that extraction has been halved between 2004 and 2005 which contradicts this. The country also extracts some small amounts of natural gas and oil but hydro resources are the main available energy resources in Tajikistan.

Mineral depletion (% of GDP) is equal to the product of unit resource rents and the physical quantities of minerals extracted. It refers to bauxite, copper iron, lead, nickel, phosphate, tin, gold silver and bauxite. According to the Green data book there is zero mineral depletion in

Tajikistan, but according to *Minerals Yearbook* of the US Geological Survey more than 400 mineral deposits have been explored, from which some 70 types of minerals are extracted (Levine and Wallace 2000, 2004). According to other sources among about 100 existing mines some 70 are currently operating, producing 40 different kinds of minerals (ADB 2004, p. 8; UNECE 2004, p. 93). Tajikistan is accordingly rich in mineral resources, especially rare metals, semiprecious and precious stones; non-ferrous metals such as tin, lead, antimony and mercury. The zero indication is probably due to the smaller amount that is currently registered as extracted: 3,000 kg of gold, 5,000 kg of silver, 800 ton of lead and 30 ton of mercury. In addition, Tajikistan produces a number of other mineral commodities not listed and for which information is inadequate to derive estimates (Levine and Wallace 2000). This is further confirmed when looking at the numbers of thousands of tons of waste created from the mining and concentrations facilities; 11,700 tons of waste of major pollutant antimony and mercury in Aininsk, 217,000 tons of waste of major pollutants lead, zink and gold in Adrasman and 560,000 tons of waste in Pedjikent of major pollutant cyanide. Due to uncertainties in information no estimate is provided for mineral depletion although this is most likely to be larger than zero, quite possibly significantly so.

Net forest depletion (% of GDP) is estimated from the product of unit resource rents and the excess of roundwood harvest over natural growth. This shows a zero number in the WB estimates which makes sense since this is what is officially reported. The data published by the Tajik Forest Research Institute, however differ considerably from those obtained through remote sensing observations (UNECE 2004). The symptoms from deforestations are also obvious and have led to a serious threat in the form of erosion, landslides and the impoverishment of winter pasture. The figures needed to estimate net forest depletion are not straightforward but using the lowest numbers given by different sources we can arrive at an approximate value, i.e., silviculture and sanitary cutting 5,000–7,000 m^3, illegal logging 10,000–15,000 m^3 (Republic of Tajikistan 2003, UNECE 2004), forest destruction (due to cattle grazing and natural disasters) 5000–10 000 m^3 (UNECE 2004, p. 127). Annual increment 12,000–16,000 m^3 (Research Laboratory for Nature Protection 2003). Consequently, wood extraction exceeds increment by 8,000 m^3. In Tajikistan the main function of the little forest available is to protect the environment, that is, to provide services such as water storage, prevent erosion and soil degradation. For this reason logging is prohibited except for sanitary and restoration work. By implication, the cost of forest depletion is not in lost future revenues from logging it is in increased cost of ecological degradation such as soil erosion and in some areas from increased risks of severe disasters such as of landslides. To estimate the value of damages of soil erosion due to deforestation is extremely complex since soil erosion is dependent on a multiple of natural and anthropogenic factors that interact and reinforce each other. In addition, these types of relationships are rarely linear, but typically react at a threshold level (for example a land slide) after which the damage might not only be extremely costly but also irreversible. No estimate for net forest depletion is accordingly given in the genuine savings table although as the information provided above shows this value is likely to be considerable.

Carbon dioxide damage (% of GDP). An estimate of USD 20 marginal global damages per ton of carbon emitted. Estimates in Green data book used.

Particulate emission damage (% of GDP) is estimated from willingness to pay to avoid mortality and morbidity attributable to particulate emissions. Estimates in Green data book used.

Water pollutant damage (% of GDP). There are some 4,000 registered pollution sources in Tajikistan[39] and only 28.8 per cent of the drinking water meets bacteriological standards.[40] Waterborn diseases have increased considerably as indicated in Table 4.7. The most appropriate way of estimating water pollution damage is to estimate the willingness to pay (WTP) for improved water quality. Transferability of WTP results from studies elsewhere is always questionable due to economic, geographical, ecological, cultural and demographic differences. The fact that health effects from poor water quality has increased considerably the last year makes a study estimating welfare effects of improved health status from increased water quality carried in Egypt appropriate (Abou-Ali and Carlsson, 2004). This study estimated a WTP of USD 37.5 per household/year for improved water quality. As pointed out in the study it is probably an understatement due to poor understanding of the source of disease, especially for non-acute health problems but also related to suspicions of the study in itself. For the purpose of estimating water pollutant damage based solely on health effects is an underestimation since the poor water quality has negative economic implications both for agriculture and industry.

Soil depletion (% of GDP). There is no monitoring of the use and conditions of land resources in Tajikistan. No authority regularly collects data of soil quality and land degradation. The measurement of concentration of chemicals in soil that used to be carried out at 25 points throughout the country ceased in 1990s (UNECE 2004). According to the Tajik NAP about 97.7% of the territory of agricultural lands is to some degree subject to erosion (MNP 2000). The fact that there are different levels of erosions makes it extremely difficult to estimate the cost of this depletion. The Tajik National Strategy and Action Plan for Sustainable Mountain Area Development (CAMIN 2001) estimates the cost of land degradation based on the decrease in the gross yield of cotton, potatoes, vegetables and melons. According to this estimate soil degradation result in a loss of USD 224 million to the country's economy. These estimates were made based on a comparison of yields between 1992 and 1997 which was the period of the civil war. As such it was a period when it was extremely difficult to access inputs such as fertilisers. Between 1998 and 2005 the average yield/ha has increased by 36.6% for cotton, 50% for potatoes, 32.6% for vegetables and 53.9% for melons (World Bank 2004). These increases are probably a result of increased fertiliser use, improved resource allocation and maybe to some extent due to the effects of privatisation. Productivity is higher at household plots. Comparing the overall productivity of neighbouring countries we can see that Tajikistan show very poor productivity figures. The over cropping of cotton has resulted in degraded soil structure and loss in fertility. A clear trend in the figures of land use is that the number hectares used has steady increased. Between 1990–1995 about 795,200 ha was used, between 1999–2003 about 856,600 ha was used for agriculture. The numbers for 2004 show that 886,864 ha is in use (IMF 2005). At the same time a progressively smaller amount of irrigated land is being used. Of the 720,000 ha of irrigated land only some 515,000–

[39] Water quality data has not been submitted since 1996 to State Committee for Statistics (UNECE 2004).

[40] Republican Sanitary-Epidemiological Service (2004). Analysis of the Activity of the Republican Sanitary-Epidemiological Service in 2003. Dushanbe 2004.

592,000 is being used.[41] An explanation to this is the run down irrigation and drainage systems, but it might also be a symptom of extreme land degradation. According to UN/SECO 90,000 ha has been abandoned and 115 lost to salinisation. Economic measures for soil degradation are accordingly difficult to estimate since the type of local data needed is not available. Given the great significance of erosion and the depletion of soil quality in Tajikistan an approximation is made based on studies from areas with similar problems (Olson and Campbell 2003). Based on these studies it is estimated that problems from sustainable land management deduct between 3–7% of the agricultural GDP. For out estimate of soil depletion in Tajikistan an average measure of this estimate, i.e., 5% of agricultural GDP is used. Numbers for agricultural GDP is deduced from IMF (2005).

[41] Numbers are for 2004 and estimates are taken from IMF (2005) and World Bank (2006).

Country Economic Reports

Vietnam 1997: Managing the Transition to Free Trade: Vietnamese Trade Policy for the 21st Century	1997:4
Ethiopia 1996: Government legitimacy, Aid and SustainableDevelopment	1997:5
Vietnam 1997:2 Small, Medium, or Large?	1997:6
Tanzania 1997 The Urge to Merge: The Revival of East African Cooperation	1997:7
Laos 1997: The Poor and the Rich	1997:8
Zimbabwe: Structural Adjustment and Productivity: A Study of the Manufacturing and Agricultural Sectors	1998:1
Uganda: Towards Results-Oriented Economic Management?	1998:2
Ethiopia: Regional and Business Sector Challenges	1998:3
Kenya: From Chaos to Prosperity?	1998:4
Angola: More Oil and Financial Problems	1998:5
Guinea-Bissau: Going into High Gear	1998:6
Cape Verde: The Economics of Mudança	1998:7
Vietnam and the Asian Crisis:	1998:8
Causes, consequences and cures Cambodia: The Challenge of Productive	1998:9
Employment Creation Sri Lanka: Institutions, Economic Policies and Economic Growth	1999:1
Tanzania: Cost-Sharing in Development Projects Principles, Practice and Problem	1999:2
Mozambique in a Post-Washington Consensus Perspective	1999:3
Moçambique: Numa Perspectiva do Consenso Pós-Washington	1999:3
Kenya:Economic Reorms with Labour Market	1999:4
Rigidities; The Kenya Experience Uganda: Uganda at the End of the 1990s: A Medium-Term Assessment	1999:5
Zimbabwe:Employment, Labour Market Reform and Trade Liberalisation Zimbabwe 1990–1997	1999:6
Mozambique: Dutch Disease in Mozambique?	2000:1
Rwanda: rwanda Looking Ahead: Reconciliation, reform and Regional Stability	2000:2

Sri Lanka: Dispersed Industrial Pattern for Reducing Poverty and Regional Inequality in Sri Lanka	2000:3
Tanzania: Tanzania 1999: Obstacles to Private Sector Growth	2000:4
Eritrea: Eritrea 1999: A bleeding country that never kneels down	2000:5
Moçambique: Doença Holandesa Moçambique?	2000:6
Laos: Emerging Rice Market in Laos?	2000:7
Cape Verde: Putting New Life Into Reform Policy, And Then…	2000:8
Cabo Verde: Dando Vida Nova Política de Reformas, e depois...	2000:9
Zimbabwe: Maize Markets in Zimbabwe	2000:10
Cambodia 1999–2000 Land, Labour and rural Livelihood in Focus	2001:1
Poverty in Mozambique	2001:2
Tanzania 2000 Growth, Multilateral Debt Relief and Program Aid	2001:3
Pobreza em Moçambique	2001:4
The Kenyan Interim Poverty Reduction Stragety: A Policy Framework for Growth and Poverty Reduction?	2001:5
Step by Step: Economic Reform and Renovation in Vietnam before the 9th Party Congress	2001:6
The West Bank and Gaza Strip A case of unfulfilled potential	2001:7
Angola 2000: Coming out of the Woods?	2001:8
The Poverty Reduction Strategy Process in Mozambique	2001:9
O Processo de Estratégia de Redução do Pobreza, PRSP, em Moçssmbique	2001:10
Towards Peac, Growth and Poverty Reduction in Rwanda	2001:11
Burkina Faso, Out of the Poverty Trap?	2001:12
Mali, Coping with Adversity	2001:13
Kenya and the East African Community: A report for Sida	2002:1
Malawi: Economic Growth Public Sector Reform and Poverty	2002:2

Cape Verde: From Aid Dependency To Self-Sustanining Growth?	2002:3
Tanzania 2001 New Strategies for Poverty Reduction and Debt Relief	2002:4
Impacts of Trade Liberalisation in Zambia	2002:5
Aid an Growth in Rwanda	2004:1
A Tale of Three Countries – Structure, Reform and Performance in Mali, Burkina Faso and Benin	2004:2
External Shocks, Exchange Rate Regime and Growth in Burkina faso and Mali	2004:3
Ethiopia: Economic Performance and the Role of the Private Sector	2004:4
Angola: Reaping the benefits of peace?	2004:5
Public Finance Management Reform in Malawi	2005:1
Cambodia – Ready for an Economic Take-off?	2005:2
Poverty and Development in Timor-Leste	2005:3
Taxation in Tanzania – Revenue performance and incidence	2005:4
Regional Development and Government Support to SMEs in Vietnam	2005:5
Limites et défis de l'intégration régionale en Afrique de l'Ouest	2005:6
Angola: Getting off the hook	2005:7
An Integrated Ecnomic Analysis of Pro-poor Growth in Kenya	2005:8
Growth and Poverty Reduction: Evaluating Rwanda's First PRS	2005:9
Determinants of Poverty in LAO PDR	2005:10
The Impact of HIV/AIDS on the Economy, Livelihoods and Poverty of Malawi	2006:1
Employment and Growth in Cambodia – An Integrated Economic Analysis	2006:2
Challenges for Pro-Poor Growth in Uganda	2006:3
Economic Development in Timor-Leste 2000–2005	2006:4
Migration and Pro-Poor Growth in Albania – An Integrated Economic Analysis	2006:5

Angola: Surfing the Oil Market	2006:6
Genre et économie au Burkina Faso – Vers l'égalité des chances?	2006:7
Understanding Rural Poverty in Cambodia	2007:1

Halving poverty by 2015 is one of the greatest challenges of our time, requiring cooperation and sustainability. The partner countries are responsible for their own development. Sida provides resources and develops knowledge and expertise, making the world a richer place.

SWEDISH INTERNATIONAL
DEVELOPMENT COOPERATION AGENCY

SE-105 25 Stockholm Sweden
Phone: +46 (0)8 698 50 00
Fax: +46 (0)8 20 88 64
sida@sida.se, www.sida.se