Environmental Finance

Pre-feasibility Analysis, Project Pipelines and Institutional Support for Debt-for-Environment Swap in the Kyrgyz Republic

Tacis

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Also available in Russian under the title:

Предварительное технико-экономическое обоснование, определение перечня проектов и мер институциональной поддержки для зачета долга в счет мер по охране окружающей среды в Кыргызской Республике

FOREWORD

This report presents the results of a project on Pre-feasibility Analysis, Project Pipelines and Institutional Support for Debt-for-Environment Swap in the Kyrgyz Republic. The study aims to assist the Government of the Kyrgyz Republic in analysing opportunities for, and challenges to, swapping (part of) its external debt for domestic financing of environmental projects. The report suggests that such a swap is likely to be feasible and could be beneficial to both the Kyrgyz Republic and the creditor countries. The pre-feasibility study is only a first step. A lot more remains to be done to convince creditors of the benefits of swapping debt and that the resources could be managed in a transparent and accountable way.

This report was prepared in the framework of the Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe (EAP Task Force), whose Secretariat is located in the OECD's Environment Directorate. The project was managed by Nelly Petkova, with support provided by consultants Malgorzata Markiewicz (Public Finance Expert) and Michal Wilczynski (Environmental Expert) from CASE-Poland and Roman Mogilevsky from CASE-Kyrgyzstan. The preparation of this report was financially supported by the EU Tacis Programme.

The report has been prepared on the basis of available documents and data as well as inputs from Kyrgyz experts and officials and representatives of international institutions (see Annex 10 for people interviewed). Special thanks go to Omor Rustembekov, Djiparkul Bekkulova and Tatiana Filkova from the Ministry of Ecology and Emergencies and Bakytbek Satybekov, from the Ministry of Finance of the Kyrgyz Republic, who have contributed enormously to the implementation of the project.

The report was reviewed by Brendan Gillespie and Xavier Leflaive from the OECD. Thomas Zylicz from the Warsaw Ecological Economics Center, Warsaw University, commented on an earlier draft of the report. Grzegorz Peszko (currently a World Bank officer and previously an OECD/EAP Task Force Secretariat member) was instrumental in initiating the project with the Kyrgyz Government. Carla Bertuzzi helped with collecting and verifying statistical data. Dinara Aknazarova provided administrative support. Each of these contributions is gratefully acknowledged.

The views expressed in this report are those of the authors and do not necessarily reflect those of the OECD or its member countries.

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List of Abbreviations

ADB	Asian Development Bank
CA	Current Account
CAMP	Central Asian Mountain Partnership
CEE	Central and Eastern Europe
CI	Conservation International
CIDA	Canadian International Development Assistance
CIS	Commonwealth of Independent States
CDF	Comprehensive Development Framework
CSAC	Consolidated Structural Adjustment Credit
DANIDA	Danish International Development Agency
DFES	Debt-for-Environment Swap
DFID UK	Department for International Development of the United Kingdom
DSA	Debt Sustainability Analysis
EBRD	European Bank for Economic Reconstruction and Development
EC	European Commission
EECCA	Eastern Europe, Caucasus and Central Asia
ESAF	Enhanced Structural Adjustment Facility
ESMAP	Energy Sector Management Assistance Programme
EU	European Union
FDI	Foreign Direct Investment
FoE	Friends of the Earth
FONAMA	National Fund for the Environment of Bolivia
FONCODES	Social and Poverty Fund (of Peru)
FSU	Former Soviet Union
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gases
GNP	Gross National Product
HIPC	Highly Indebted Poor Countries (Initiative)
IBRD	International Bank for Reconstruction and Development (World Bank)
IDA	International Development Assistance (World Bank)
IDB	Islamic Development Bank
IFAD	International Fund for Agricultural Development
IFI	International Financial Institution
IMF	International Monetary Fund
IUCN	The World Conservation Union
JICA	Japan International Co-operation Agency
JICB	Japanese International Cooperation Bank
JUMP	Juniper Forests Management Plans
KFAED	Kuwait Fund for Arabic Economic Development
KfW	Bank Kreditanstalt für Wiederaufbau (German Bank for Reconstruction)
KGS	Kyrgyz Som
KICB	Kyrgyz Investment Credit Bank
KIRFOR	Kyrgyz-Swiss Forestry Sector Support Programme
MEE	Ministry of Ecology and Emergencies of the Kyrgyz Republic
MTBF	Medium Term Budgetary Framework
NBKR	National Bank of the Kyrgyz Republic
NDF	Northern Development Fund

NEAP	National Environmental Action Programme
NGO	Non-Governmental Organisation
NPRS	National Poverty Reduction Strategy
NPV	Net Present Value
NTEF	National Trust EcoFund (of Bulgaria)
ODA	Official Development Assistance
ODS	Ozone Depleting Substances
O&M	Operation and Maintenance (Costs)
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of the Petroleum Exporting Countries
OPEC Fund	OPEC Fund for International Development
PC	Paris Club
PIP	Public Investment Programme
PPP	Purchasing Power Parity
PRGF	Poverty Reduction and Growth Facility
PROFONAMPE	Protected Areas Fund of Peru
PRS	Poverty Reduction Strategy
RES	Renewable Energy Source
SBA	Standby Arrangement
SDC	Swiss Agency for Development and Co-operation
SDR	Special Drawing Rights
SECO	Swiss Economic Co-operation Office
SFS	State Forest Service of the Kyrgyz Republic
SME	Small and Medium Enterprises
STF	Systemic Transformation Facility
TNC	The Nature Conservancy
ToR	Terms of Reference
UNICEF	United Nations Children's Fund
UNCTAD	United Nations Conference for Trade and Development
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USD	US Dollar
WB	World Bank
WWF	World Wildlife Fund
WWTP	Wastewater Treatment Plant

List of Physical Units

ha	Hectare
kWh	Kilowatt-hour
m^3	Cubic meter
Mg	Mega gramme
MW	Megawatt (10^6 * watt)
TJ	Terajoule
Toe	Tonne of oil equivalent
TWh	Terawatt-hour (10^9*kWh)
SO_2	Sulphur Dioxide
Mg/Nm^3	Milligramme per normal cubic meter

Exchange Rates

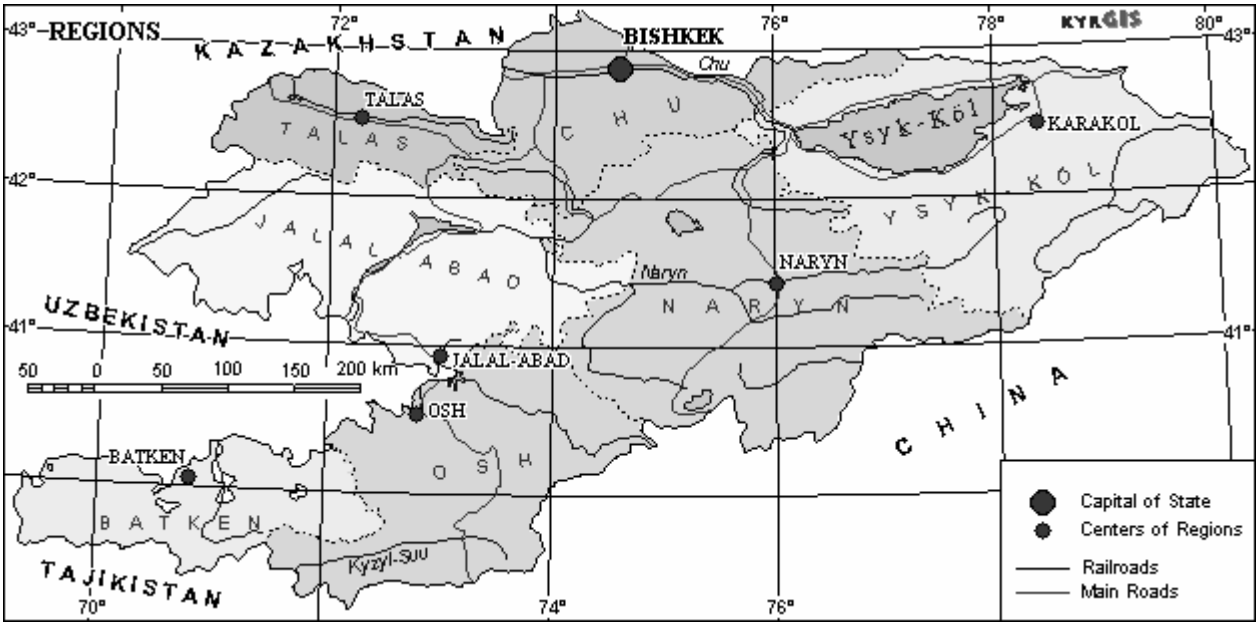
To convert the financial data presented in this report from Kyrgyz Som into US Dollars and EUROS, annual average exchange rates have been used:

Table 1. Exchange Rates, Som/USD, and EURO, Yearly Average

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Som/US Dollar	12.8	17.27	20.84	38.97	47.71	48.45	46.94	43.72	41.51
Som/Euro	-	-	-	41.52	44.14	43.38	44.26	49.27	52.96

Source: National Bank of the Kyrgyz Republic.

Map of the Kyrgyz Republic



EXECUTIVE SUMMARY

Debt-for-environment swaps (DFES) can provide low-income countries with a unique opportunity to link debt reduction with global/regional environmental benefits and poverty alleviation. Projects financed through DFES can aim to foster economic growth and contribute to peace and security in the region by alleviating regional and cross-border conflicts. They can address other internationally-agreed objectives as well, such as the Millennium Development Goals or multilateral environmental agreements. DFES can raise more money for environmental investments than other debt swaps, without adverse budgetary and inflationary consequences. In addition, implementing DFES within a robust institutional framework can help build capacity in managing public environmental expenditure in accordance with international good practices.

At the same time, there are risks involved with DFES. These include risks such as: the country's credit rating being downgraded; distorting more efficient debt treatment operations (restructuring and relief); macro-economic and political instability; inflationary impacts; further deterioration of the fiscal situation; and the possible mismanagement of debt swap funds. The report explores possible ways to mitigate these risks in the case of the Kyrgyz Republic.

International experience with debt-for-environment swaps has shown that preparing, negotiating, and implementing a DFES is a complex, difficult, and lengthy process. First, it is necessary that a sufficient amount of debt be eligible for swapping, so that the swap could generate revenues that more than offset the significant transaction costs involved. A credible fiscal capacity to service the debt swap is also required. Second, to attract creditors' interest, the country seeking a DFES should identify a convincing expenditure programme demonstrating the benefits that would be achieved by the debt swap; in addition, such a programme should be based on transparent and robust project selection criteria and implementation rules and procedures. Third, the country should design an accountable institutional arrangement to manage the associated revenue stream. Full and lasting government backing is also crucial for the success of the debt-for-environment swap implementation.

This Pre-Feasibility study shows that a debt-for-environment swap (DFES) between the Kyrgyz Republic and Paris Club creditors is feasible and could generate benefits for both, and for the international community more broadly.

During the past few years, the overall economic situation in the Kyrgyz Republic has significantly improved. The country has succeeded in achieving stable macroeconomic growth and low levels of inflation; the economy has become more diversified outside of the traditional agricultural and mining sectors. However, in 2003, with a GDP/per capita of 1 808.5 USD[1] compared to an OECD average of GDP/capita of 26 000 USD[2], the Kyrgyz Republic remains among the poorest countries in the world. Despite the progress made in key economic sectors since 2001, the country still faces significant challenges in servicing its external debt. With the 2005 Paris Club debt stock operation, sustainability of its external public debt was restored but a cautious debt management approach is needed to avoid further debt servicing problems.

[1] Measured in current Purchasing Power Parities (PPPs).

[2] Measured in current exchange rates and PPPs.

With the 2005 Paris Club arrangement, the government of the Kyrgyz Republic committed itself to not seek further debt relief from the Paris Club. The Government was therefore interested in additional options to limit the debt burden through debt swap operations. Both the 2002 and 2005 agreements with the Paris Club contain a clause on debt swaps allowing creditors to undertake, on a bilateral and voluntary basis, individual debt swaps (debt-for-environment, debt-for-aid, debt-for-equity) with the Kyrgyz Republic. Given the low level of public expenditures allocated to the environment, and the favourable consequences that further investment in the sector could have on economic development and poverty reduction, the Kyrgyz government identified DFES as the preferred option.

The feasibility study shows that the amount available through a potential DFES would be modest and spread over time. The report explains why Germany, France, the Russian Federation and Turkey are creditors that might be potentially interested in DFES with the Kyrgyz Republic. In calculating the potential revenue from DFES, a 20% conversion rate has been assumed. If Germany and France agreed to swap 20% of their annual debt repayments, the available resources in the period 2007 – 2028 are estimated in the range of USD 70-600 thousand annually (Germany's contribution would be about 90% of this amount)[3]. If the Russian Federation and Turkey (the first and the second largest creditors) joined a programme, this would significantly increase the amount available for DFES and would bring the annual revenue up to almost USD 5 million by 2028. However, there is no indication at the time of writing this report that these countries would be interested in a DFES. A positive track record might generate new swap opportunities in the future, in particular with neighbouring non-Paris Club countries, such as China and Uzbekistan.

These estimates have to be compared with the current level of domestic public environmental expenditure in the Kyrgyz Republic. In 2003, this level was USD 7 million, of which USD 900 000 was for investment. Thus a DFES involving Germany, France, the Russian Federation and Turkey would increase annual environmental expenditure by 70%.

Since DFES can potentially generate sustainable revenues, the report has identified project pipelines which would qualify as an expenditure programme. A review of the Kyrgyz environmental priorities and creditors' preferences suggests that the most promising priority areas could be those which aim at:

- Reducing pollution of regional waters;
- Protecting biological diversity; and,
- Reducing emissions of greenhouse gases.

In the above priority areas, five specific project pipelines were identified in cooperation with Kyrgyz experts and carefully evaluated. Eligibility criteria require that project pipelines achieve environmental benefits along with poverty reduction, local economic development and sustainable growth as well as security in the region. The review suggests that the two most promising project pipelines were biogas production from animal waste, and prevention of irreversible loss of biodiversity.

Given the possible level of revenues that a DFES could generate, local co-financing would be needed for the implementation of any project pipelines. Therefore, careful selection of the most cost-effective projects, and opportunities to co-finance projects from other sources, would need to be the cornerstones of project selection. This is also a prerequisite for creditors to be convinced that the Kyrgyz Republic has the capacity and commitment to manage their funds efficiently. It is worth noting that even if a DFES does not materialise, the project pipelines that have been prepared as part of this work identify cost-effective priority

[3] Indeed, such a low level of financial flows might be a disincentive for creditors, who might consider that transaction costs associated with setting and monitoring the swap are relatively high.

projects that could be used by the Kyrgyz Government in discussions with donors when developing technical cooperation.

The Kyrgyz authorities are still considering the most appropriate institutional set-up to manage, monitor and report on the expenditure programme that could be established to manage a DFES. Alternative tools and procedures have to be assessed and discussed with creditors that will take into account the nature of the programme and the institutional capacity in the country.

This report suggests that, if sufficient revenues were generated by a DFES, they could be managed through a local revolving fund (a fund that is replenished at regular intervals from different sources). The final choice, however, would depend on actual negotiated swaps and the resources generated. If the swap amounts are too small, the Kyrgyz Government may consider implementing individual projects rather than establishing an institution. Another option would be to open a DFES window in an existing domestic institution with a proven track record in development finance. If a dedicated institution is established, it should be managed by local staff and contribute to building capacity of both managers and project owners as the best way to ensure sustainability of environmental protection efforts in the country.

Since 2002, representatives of the Kyrgyz Government have been actively promoting the DFES idea in different international forums and have declared their commitment to work for it. Usually, debt-for-equity swaps are the first choice of creditors as they allow them to recuperate more of their assets. Therefore, the Government of the Kyrgyz Republic has to provide creditors with convincing arguments that a DFES would better serve their interests. International experience shows that a strong signal from the government that DFES is a national priority during negotiations with creditors is a crucial factor for success. In addition, in order to be effective, the preparatory process will need a strong, dedicated leader. The Ministry of Finance, supported by and working closely with the Ministry of Ecology and Emergencies, could provide this leadership.

Lessons learned from the Kyrgyz case are relevant for other low-income countries in the region and beyond. Some of the main lessons include:

- Implementing a DFES requires a thorough analysis of the debt portfolio, to assess the magnitude of the swappable debt and of the potential revenue flows;
- The expenditure programme is a key requirement for attracting creditors' interest and eventual commitment. Such programmes should focus on issues of potential interest to creditors, such as international commitments to poverty reduction or environmental issues that are relevant at a global and regional level;
- Another key factor of success is the institutional framework designed to manage, monitor, and account for the implementation of the expenditure programme. Whatever the option, it should guarantee transparent rules of project selection, and accountable management of the revenue flows and expenditures;
- Preparation, negotiation, and implementation of a DFES requires a strong cooperation between the Ministry of Finance, that leads the discussions with creditors, and the Ministry of Environment, that is instrumental in identifying an attractive expenditure programme (project pipelines). Both institutions should be involved in the governance of the entity that will implement the expenditure programme;
- The process takes time to materialise (about 4 years in the case of the Kyrgyz Republic); hence the need for a stable policy and institutional framework, with a strong, lasting commitment.

Harnessing this opportunity will not be easy. However, it is an efficient way to secure additional public finance for environmentally-related projects, in countries where such commitments are fragile and always challenged by strong budgetary pressures.

1. BACKGROUND AND INTRODUCTION

Since its independence, the Kyrgyz Republic has accumulated a substantial amount of foreign debt which it has not been able to service. This is a paradox, as the Kyrgyz Republic began the transition period with no external debt whatsoever[4]. In addition, in the middle of the 1990s, the Kyrgyz Republic was a leader of economic reforms among the former Soviet Union Republics. Currently, in USD terms, the Kyrgyz Republic is among the poorest countries in the world[5].

In 1993, the Kyrgyz Republic was the first to embark on an IMF support programme aimed at stabilising and transforming its economy. The presence of IMF funding attracted other credit resources from institutional creditors. The discovery of gold fields at about the same time as the implementation of the IMF Enhanced Structural Adjustment Facility (ESAF) programmes brought economic growth at high rates. However, with a hypertrophied public sector, the prospects of economic growth without fiscal adjustments were unrealistic. As an IMF study on fiscal sustainability shows, the actual primary deficits exceeded by almost seven percentage points the level calculated as sustainable (Cottarelli and Doyle, 1999).

The devaluation crisis experienced in the middle of 1996 (by almost 50%) led to an abrupt increase in the public debt expressed in domestic currency. The consequence was an agreement signed with the Russian Federation on debt restructuring. The situation was complicated again by the Russian crisis of 1998. In 2002, there was an agreement with Paris Club creditors resulting in a non-concessional flow rescheduling with the possibility of conducting debt swaps. Following the agreement with the Paris Club, the Kyrgyz authorities successfully completed negotiations with essentially all bilateral creditors on terms comparable to those of the Paris Club. While these agreements significantly lowered the Kyrgyz debt service obligations, the debt stock remained high. Therefore, in March 2005, a debt stock reduction agreement was signed with Paris Club creditors. It brought significant debt relief, however continued fiscal adjustment is critical for maintaining macroeconomic stability.

The clause on the debt swaps, included in the 2002 agreement with the Paris Club, opened a window of opportunity for the Kyrgyz Republic. Following the Paris Club agreement, at the initiative of the Ministry of Ecology and Emergencies, the Kyrgyz Government established an inter-ministerial working group, to discuss and develop modalities for utilising the opportunity presented by the debt-for-environment swap (DFES). At present, there seems to be a greater willingness among the international community to consider debt-for-environment swaps than there has been in the past. There is also an opportunity for the Kyrgyz Republic to link the debt-for-environment swap initiative with the existing CIS-7 Initiative. The Kyrgyz Government is also trying to advance and link the DFES idea to a UN initiative on Poor Mountainous countries.

In addition, the Ministry of Ecology and Emergencies requested that the EAP Task Force Secretariat (OECD) assist in establishing a framework for bilateral negotiations of debt-for-environment swaps with creditors, similar to the assistance that the EAP Task Force had earlier provided to Georgia. The project on "Pre-feasibility Analysis, Project Pipelines and Institutional Support for Debt-for-Environment Swap in the Kyrgyz Republic" was formalised and officially launched in November 2004.

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[4] This is so because as soon as after 1991, the Russian Federation, as agreed with the creditors, offered the other EECCA to take over all official foreign liabilities of the former Soviet Union.

[5] According to the World Bank definition (World Bank Global Development Finance, 2004), a country is classified as low-income when the annual GNP per capita is equivalent to or less than USD 735 (in 2002 prices). There are about 60 low-income countries in the world, including 8 EECCA countries: Armenia, Azerbaijan, Georgia, the Kyrgyz Republic, Moldova, Tajikistan, Ukraine and Uzbekistan.

The study undertaken in the course of this project has focused on three major issues: debt profile and sustainability, identification of project pipelines for the expenditure programme to be financed by potential DFES resources and governance issues.

Part 1 of this study sets the stage for the subsequent analysis. It introduces different debt treatment operations and models of swap transactions and discusses advantages and disadvantages related to each of these options. It presents some lessons learnt from international experience with DFES implementation.

Part 2 focuses on debt profile and sustainability issues. The data collected are grouped and analysed by creditors as not all of them are potential candidates for debt-for-environment swaps. The report examines external public and publicly-guaranteed long-term debt owned to official bilateral creditors. Taking into account existing experience with debt-for-environment swaps (DFES) (mostly, Poland and Bulgaria) and assuming that all identified creditors participate in the DFES scheme, flows of potential revenues are calculated and conclusions made. Then, the current level of environmental expenditure is discussed and the role that environmental objectives play in the Public Investment Programme is identified.

Part 3 presents an analysis of national environmental priorities and project pipelines suggested for inclusion in an expenditure programme to be co-financed by potential DFES resources. To this end, a number of strategic documents have been reviewed. The main priorities of the Kyrgyz Republic include sustainable economic growth and reduction of poverty. This report looks at three priority areas eligible for financing from potential DFES resources, namely: water resources protection; climate protection; and biodiversity protection. In addition, focus is placed on problems common to all of Central Asia, i.e. soil desertification and erosion and their relation to climate change, plant life degradation and deforestation. Five potential pipelines are identified, of which two are recommended for further detailed economic evaluation.

Finally, Part 4 discusses institutional options for governance and management of the expenditure programme with special attention to the local legal and regulatory framework and issues related to project cycle management. The conclusions of this analysis and further actions are presented in Part 5.

The results of this report were presented and discussed at a multi-stakeholders' meeting held in Bishkek on 28 June 2005.

1.1 Possible Debt Treatment Operations

The international community has long recognised the potential of debt swap operations for raising capital in low-income countries. As such, debt swap operations have received particular attention over the past 20 years. This section looks at different debt treatment operations and models of swap transactions. It draws some lessons from international experience with DFES implementation.

> A **debt swap** (or conversion) is defined as the cancellation of (part of the) external debt of a country in exchange for the debtor government's commitment to mobilise domestic resources (local currency or another asset, such as bonds, privatised public assets) for an agreed purpose at agreed terms. The cancellation of external debt usually comes at a discount from the face value[6].

There are several major debt swap transactions:

Debt-for-aid (development) swap – the cancellation of external debt in exchange for local currency paid for development projects (e.g. health, education) in the debtor country;

[6] Definitions and examples presented in this chapter are mostly based on a UNDP Guide for DFES for National Desertification Funds (1998).

Debt-for-equity swap – the cancellation of external debt in exchange for local currency invested in equity (shares) in a domestic firm or privatised public enterprise but also in natural resource stocks;

Debt-for-nature (environment) swap – the cancellation of external debt in exchange for local currency used to finance conservation ("green") or environmental protection ("brown") projects, i.e. pollution abatement, development of environmentally-related infrastructure, preservation of biological diversity. Debt-for-environment should also be designed to alleviate poverty and foster economic development.

The international debt crisis of the 1980s led to the introduction of the debt swap mechanism for conversion of debt owed by developing countries which were unable to service their external debt. The first swap operation was applied by Chile in 1985 as a debt-for-equity swap. The first debt-for-nature swap was concluded in 1987 between the government of Bolivia and *Conservation International (CI)*. As a result, USD 650 thousand in debt was cancelled in return for the establishment of the *Beni Biosphere Reserve* in north-eastern Bolivia and the creation of a small endowment to cover its operation costs. Other swaps followed the same year in Costa Rica and Ecuador. Since then, the DFES have been used in low income countries to capitalise environmental trust funds or endowments (see Annex 6). It has also been common in those African countries that have been most severely affected by desertification[7]. DFES have been also implemented in many Latin American countries (e.g. Argentina, Bolivia, Chile, Colombia, El Salvador, Jamaica and Uruguay) or transition countries (Poland, Bulgaria, Georgia (in progress)). It is estimated that over 30 countries have benefited from DFES, which have generated over USD 1 billion in funding for the environment.

The economic rationale of debt swaps is based on the willingness of creditors to accept less than the face value of debts and of the debtor government to make payment at a price higher than the reduction agreed by the creed in exchange for cancellation of the debt. DFES can bring multiple benefits: creditors can be relieved of an asset that might never be repaid in full, and debtors can reduce the external debt burden without drawing down scarce foreign reserves and may even gain considerable debt relief (GEF, 2002).

The transaction of debt swap is **feasible** if:

- A creditor is willing to donate or sell debt at a discount from face value. The debt must be available and eligible for conversion. The creditor is willing to do this, if the benefits of reducing debt through debt swap outweigh the benefits of waiting for future repayment. In order to swap debt, the creditor government should recognise the positive development impact of debt relief combined with increased social or environmental investment. In the case of commercial creditors or government export agencies, their primary motivation is based on the desire to recover some debt that they perceive as unlikely to be repaid at full face value.
- A debtor government is interested in and able to provide local currency or another commitment in support for the environment. The intention of a debtor government is to retire its debt at the highest possible discount from face value. The debtor government has to appreciate the positive impact of debt reduction at low cost combined with increased investment in priority sectors. Another motivation may be the scarcity of foreign exchange reserves – in case of debt swap the payment is made in local currency. In order for a debt swap to be realised, the debtor government has to perceive the benefits of a swap as more advantageous than future debt relief that may be obtained through debt rescheduling agreements.

Some of the potential advantages of debt conversion are (after Moye, 2001, UNDP):

[7] Some experience of African countries in the context of potential DFES has been amply summarised in a report of UNSO on *Mobilizing Resources for National Desertification Funds trough Debt-for-Environment Swaps* in 1997.

- Debt swap retires debt at a discount from face value. The government chooses a debt swap operation only when repayment terms for debt conversion are more favourable than anticipated renegotiated terms;
- By reducing debt service payments in foreign currency debt swaps can have a positive impact on a country's balance of payments;
- Debt swap may favour investment in priority sectors which are defined by government;
- Debt-for-equity swaps may be used as an incentive to encourage privatisation or to facilitate the return of flight capital by their nationals;
- Debt swap may increase funding for development programmes. In many countries, debt swaps have stimulated the creation of local currency environmental funding mechanisms that have often been new to these countries. Debt swaps lead to greater participation by civil society, including NGOs, in implementing development projects;
- Initial capital granted through debt swaps can also be used to attract matching contributions from other donors. In the case of the Mexican debt-for-nature swap, the GEF (see: Box 6) made a major contribution to a protected area. Debtor governments usually try to estimate the degree of additionality offered by debt swap operations by determining the likelihood of the foreign investment or development assistance entering the country in the absence of debt conversion.

Some of the disadvantages related to debt swaps are:

- Lack of fiscal resources to make a prepayment may be a constraint to debt swap operations. Hence, some co-financing may be also necessary. It is believed that the budgetary impact can be managed, if payments are made over time;
- Debt swap means injection of excessive amounts of local currency into the economy that may result in inflation. In order to mitigate inflationary impact, debtor governments may structure payments in instalments or bonds. By issuing securities in local currency, the government is able to contain any potential inflationary impact of the swap. Debt-for-equity swap has no adverse monetary impact;
- Debt swap transactions are time-consuming and complex, usually requiring the use of specialised advisors which increases the cost of operations;
- There is a risk of corruption and round-tripping (investors transfer local currency generated through conversion out of the debtor country for illegal gain). In order to limit these risks strict reporting requirements should be put in place;
- In the absence of additionality, the debtor government may be subsidising investment that would have occurred anyway. This risk is highest in the case of debt-for-equity swaps with major incentives for foreign investment.

Below, we discuss some of the major debt swaps and their advantages and disadvantages as well as their relevance for the Kyrgyz Republic.

1.1.1 Debt-for-Aid Swaps[8]

Debt-for-aid swaps offer creditors an attractive opportunity of swapping the debt without significant net additional flow of financial resources to the debtor country. Debt-for-aid often means financial transfers between various agencies within the creditor country government, i.e. outstanding receivables on foreign official loans are financed by decreasing, or not increasing, the foreign aid budget. Such swaps would reduce the budget available for other official assistance programmes, and for this reason can be more easily accepted by the creditor country government.

Debt-for-aid may be attractive for creditors as a transparent transaction and usually one-time only financial transfer. Managing related expenditure can be easily incorporated into an established programming framework of bilateral official development co-operation agreements. This gives creditors direct control over disbursement and enables a partial recuperation of financial benefits through a reduction of the baseline aid budget and through tied procurement (swapped debt used to purchase goods and services from the creditor/donor country).

For the same reasons, the Kyrgyz Republic may find debt-for-aid swap less beneficial. From the Kyrgyz perspective, the major question is the value added that such a transaction would provide compared to the aid-as-usual scenario. A legitimate expectation of the Kyrgyz Republic would be that debt-for-aid should not substitute for the baseline official development assistance but would mobilise "new" and "additional" resources. Unfortunately, such an expectation would most likely be difficult to meet if debt were swapped for aid. Even if it may not affect already committed bilateral assistance, it is very likely that such a swap would influence the allocation of foreign assistance budgets in the future.

Debt-for-aid swap could in principle be used for environment and development purposes. However, as described earlier, such a transaction is usually a one-time transfer as opposed to diverting the debt repayment flows over a longer period of time. The commitment periods of official assistance budgets are not longer than one to two years. Indicative programming may sometimes stretch up to three years, but not more. Because of its short term, the value of transactions cannot be very large. This is so because if a significant amount of future liabilities is swapped for domestic expenditure on aid over the maximum period of two to three years, this could be fiscally impossible for the Kyrgyz government and could distort its foreign exchange regime. A government can bypass this constraint by issuing bonds to raise the necessary amount of resources up-front and smooth payments to the scheme over a longer period of time. Such an action would also “sterilise” potential distortions to monetary policy, which could be caused by pumping large amounts of domestic currency into the economy in a short period of time. But it would involve the additional cost of bond issuance and servicing. It would also compromise the sovereign borrowing capacity, hence may not be a feasible option for the Kyrgyz Republic in the short to medium term.

As international experience shows, debt-for-environment swaps can be designed so as to mitigate these problems and to redirect many more resources to the local economy in a way that does not create macroeconomic distortions and does not affect creditworthiness. Moreover, the expenditure programme under the debt-for-environment swap can be made fully compatible with the objectives of official aid programmes. Environment and development goals are often synergistic.

[8] The detailed analysis of different debt swaps is mostly based on a forthcoming OECD publication *Debt Swap for Environment and Development in Georgia: Pre-Feasibility Study, Institutional Option.*

1.1.2 Debt-for-Equity Swaps

The crucial difference between debt-for-equity and other debt swaps considered here is that under this scheme the creditor can recapture more of his assets. It is therefore no surprise that 98-99% of all debt conversions world-wide have been swaps for equity[9]. Debt-for-equity swaps have been quite successful in solving some of the liquidity problems in a number of the Latin American countries[10]. Debt-for-equity swaps are often preferred by creditor governments as *ad hoc* measures to compensate their domestic financial institutions affected by debt conversion. Some creditors also use this instrument to take over strategic assets in debtor countries, e.g. energy infrastructure or strategic industrial sectors.

A debt-for-equity swap would be attractive to creditors strictly on financial terms if the value of the swap was smaller or equal to the market value of the equity. Market value, in turn, is equal to the risk-adjusted present (discounted) value of the future flow, net of tax profits from the assets acquired through a swap.

Unlike a foreign firm, which is interested exclusively in financial returns, some creditor governments are also interested in environmental and social benefits that cannot be captured in monetary terms by a private investor. If this is the case, a creditor government might be willing to accept a swap value that is larger than the market value of equity. The difference would be the actual debt relief or the price that the foreign government would pay for producing local social and environmental benefits, some of which are trans-boundary or global. The market value of environmental assets must, however, be greater than zero. Otherwise, no foreign firm would be willing to accept the assets, even free of charge.

For the same reasons, the Kyrgyz Republic would benefit from swapping debt for assets that would not have found buyers otherwise, i.e. whose market value is zero. Swapping debt for assets that have a positive market value would not always yield benefits to the Kyrgyz Republic. Selling assets on the market, through competitive sale is likely to yield more revenue than swapping these assets for debt reduction with a single creditor under a very limited competition. Unless the creditor buys assets through competitive bidding (a rather unlikely arrangement under the swap), the purchase price is likely to be lower than the market value (Zylicz, 1998).

Debt-for-equity swaps also cannot contribute to capacity building in the debtor country as much as the more long-term and comprehensive approaches to the debt-for-development and debt-for-environment swaps discussed below.

A transaction beneficial to the Kyrgyz Republic on economic grounds is unlikely to attract creditors' interest, unless the assets in question yield some non-market services of a public goods character that a creditor government is interested in. Therefore, the optimum strategy for the Kyrgyz Republic would be to sell on the market any asset which has financial value and swap the debt for the economic value of non-market services. These non-market services may include services provided by improved environmental assets (water, air, soil), such as reduction of premature mortality and morbidity, flood protection or support of sustainable agricultural and forest output.

1.1.3 Debt-for-Environment Swaps

A debt-for-environment swap is among the very few mechanisms that can provide sustainable support for local economic development and at the same time mobilise domestic spending to protect purely public and common goods (such as biodiversity) or pure externalities (such as trans-boundary or global pollution) in low-income countries. These basic goods and services that nature provides are the essential basis for subsistence, social welfare and sustainable growth of local communities. They are also common global

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[9] UNCTAD (United Nations Conference on Trade and Development) (1992), *Conversion of Official Bilateral Debt*, GE.92-55494, Geneva.
[10] UNCTAD. 1992, pp. 38-42.

assets that sustain life on earth and determine the future growth of the world economy, as recognised by numerous international environmental conventions and treaties. The tragedy of common goods, such as most services provided by pristine nature, stems from the fact that they can yield only limited cash revenue to their owners or users. Therefore, they are bound to be depleted (many irreversibly), because of the inability for owners and users to co-operate. This depletion is exacerbated by the immediate pressure of poverty and the need for cash (e.g. in order to service foreign debt).

A debt-for-environment swap can be used to finance "green" public goods (nature reserves, sustainable tourism or sustainable agricultural practices) or to finance abatement of industrial pollution externalities – the so-called “brown” projects (improving energy efficiency, reducing pollution from the power and district heating sector or in selected industrial facilities). Debt-for-environment swaps can also be used to finance development of collective environmental infrastructure, such as wastewater collection and treatment systems, handling of accumulated toxic waste. In particular, development objectives can be facilitated by financing access of the poor to essential infrastructure services, such as water, sanitation and energy. Many services of such infrastructure can also yield trans-boundary or global benefits. In the absence of a financial incentive, a low-income country usually cannot realistically be expected to finance the full costs of the projects, which partly benefit downstream or downwind countries. By the same token, immediate and local needs of a low-income country usually crowd out projects that would generate purely global returns, such as prevention of climate change, protection of international waters or biological diversity.

The majority of such projects would also yield important economic benefits to poor local communities, which depend on environmental goods and services for subsistence and sustainable growth. For example, treating discharge of wastewater into the Issyk-Kul Lake from the coastal villages and cities would not only prevent eutrophication of this sensitive water reservoir, but would also help increase the attractiveness of the area for tourists. Harvesting local renewable energy sources, such as rivers or biomass, would not only benefit the global climate, but could also provide access to cheap and sustainable energy for the local communities, which do not have access to or cannot afford electricity and heat produced from imported fossil fuels. Therefore, **debt-for-environment swap can be viewed as a mechanism that blends local and foreign financing to implement projects that support local economic development and poverty reduction that otherwise would not have been financed because of their public goods character, or because their benefits are shared by many countries.**

For the Kyrgyz Republic, swapping debt for environment is an attractive option for a number of reasons:

- It provides new and additional local currency expenditure that does not replace other public spending.
- It can leverage additional local expenditure on environmental public goods that are highly important as the foundations of the country’s sustainable development, but are typically not urgent because of the immediate pressures to provide food and security to poor people, even if this undermines the long-term, sustainable basis for local food supply.
- It offers opportunities to integrate environmental quality improvements with poverty reduction, social well-being and economic recovery through protecting public health, creating new jobs and harvesting local resources and skills to generate sustainable revenues to local communities.
- It provides a unique opportunity to move towards fulfilment of international environmental agreements (such as the Climate Change Convention, the Convention on Biological Diversity).
- It can contribute to the alleviation of regional and cross-border conflicts related to the management of trans-boundary natural resources (e.g. surface waters, forests).
- It is a practical and effective instrument to mainstream the environment in the social and economic growth agenda of the Kyrgyz government. As Polish experience has shown, by raising environmental issues at the debtor country's government forum, swap negotiations, elevate the status of environmental departments, and make them partners with financial and industrial agencies.

- If properly designed, it can contribute to the improvement of the institutional capacity to develop and implement result-oriented environmental programmes, to prepare projects and to manage public expenditure in a transparent, accountable and efficient manner.

For creditors, a debt-for-environment swap has a number of attractive characteristics:

- For creditors that are concerned with global environmental problems (climate change, biodiversity), it offers an opportunity to "purchase" global environmental benefits more cheaply than at home. This benefit is proportional to the scale of potential global benefits that can be produced in the Kyrgyz Republic (e.g. the potential reduction of emissions of greenhouse gases, the size of potential carbon sinks, and the size and diversity of endemic natural ecosystems).
- For creditors concerned with international security, a debt-for-environment swap offers an opportunity to foster cross-border co-operation and confidence building between (potentially) antagonistic countries. Such measures may include protecting common natural biological resources, e.g. nature reserves, endangered species, rivers or lakes. A debt-for-environment swap can also help uproot sources of international/regional conflicts, e.g. by improving the management of water resources in trans-national rivers or by reducing pollution loads that affect the quality of life in neighbouring countries.
- For creditors concerned with poverty reduction, a debt-for-environment swap offers various win-win opportunities to eradicate poverty while enhancing environmental sustainability. In low-income countries, such as the Kyrgyz Republic, a large share of the population depends heavily on natural ecosystems for daily subsistence. Sustainable management of natural resources, such as water, soil, forests, is a solid source of food, energy and income to many local communities.
- A debt-for-environment swap may also have a positive effect on a creditor country's environmental and political image in light of the increasing political promotion of debt forgiveness to the poorest countries (e.g. the CIS-7 Initiative, see Box 3) and global co-operation for environmental protection.

Debt-for-environment swaps have a number of advantages over alternatives, such as debt-for-aid and debt-for-equity swaps. Debt-for-environment swaps can be designed as effective swaps for poverty eradication and sustainable development. This could be done by developing an expenditure programme that addresses international/regional and global common goods while eradicating local poverty, improving regional security, enhancing infrastructure for the poor and strengthening the environmental foundations of sustainable development. Therefore, **it is recommended that the Kyrgyz Republic pursue the comprehensive debt-for-environment swap scheme.**

1.2 Models of Swap Transactions

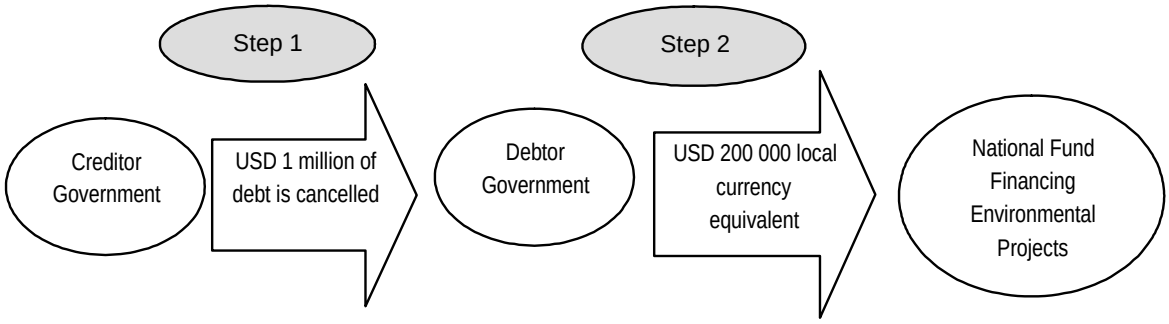
Two main models of dept swaps, depending on the number of negotiating parties in a transaction, have been used so far:

- Bilateral (direct) swaps; and,
- Third-party - trilateral or multilateral - swaps (through an intermediary).

Bilateral, direct swaps - When the swap is bilateral, the creditor government cancels debt owed by the debtor government in exchange for the debtor setting aside an agreed amount of counterpart funds in local currency for an agreed purpose. This model is used mostly in official (government to government) debt swaps. The bilateral model has been used to convert Official Development Assistance (ODA) debt and publicly guaranteed export credits. The best known and advanced case of bilateral debt-for-environment swap is the swap that Poland made with Paris Club creditors in 1991-2000 (see section 1.3 below). In addition, bilateral swaps can also be made through a multilateral swap facility, which gives the debtor a standardised framework for swapping several bilateral debts for one expenditure programme.

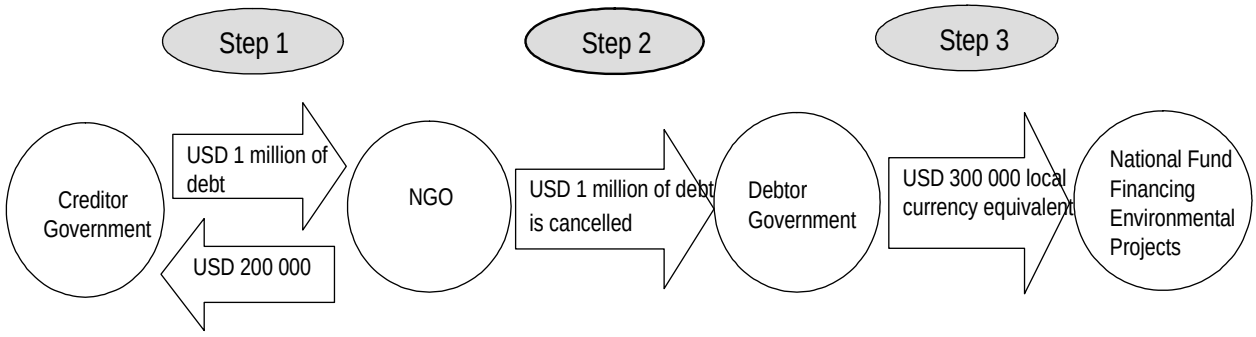
The amount of local currency may or may not reflect a discount, relative to the present face value of the original debt, and this discount can be subject to negotiations between the two countries. Another variable that needs to be negotiated is the exchange rate at which local currency payments are made, a schedule of payments (one-time transfer or instalments as repayments are due), and the mode of payment (e.g. cash, government bonds or in-kind contributions). All these variables determine the rate of debt forgiveness, or relief, embedded in a transaction. Figure 1 below presents the schematic model of a standard bilateral swap transaction.

Figure 1.Model of Bilateral Swap



Third-party swaps – A transaction can also be concluded with the participation of a third-party. The difference between the purchase price of debt and its redemption price (face value; nominal value of debt) in local currency is the gain from debt conversion, which can be invested in environmental projects. An organisation (e.g. an NGO) solicits debt donations or purchases debt at a secondary market at a discount from face value from a creditor and negotiates separately with the debtor government the cancellation of the debt in exchange for project funding. Debt for nature swaps that have been negotiated by conservation NGOs such as *Conservation International (CI)*, the *Nature Conservancy (TNC)* and the *World Wildlife Fund (WWF)*, have mostly been three-party swaps. Figure 2 below presents the schematic model of a standard trilateral swap transaction.

Figure 2.Model of Trilateral Swap



Note: Assumptions: 20% debt purchase price, 30% payment in local currency.

The converted debt is usually deposited in the form of local currency denominated government bonds in a conservation trust fund that disburses the funds (derived from interest and amortisation of the bonds) for conservation purposes agreed upon in advance with the creditor.

It is worth noting that Paris Club rules envisage the possibility of selling debt by the creditor government to an investor who in turn sells the debt to the debtor government in return for shares in a local company or

for local currency to be used in projects in the country (www.clubdeparis.org – debt swap provision). Thus, the third-party swap may be also applied under Paris Club arrangements.

Examples of trilateral swaps have been more common in Latin America, Asia and Africa since the 1980s. Through trilateral swaps, both official and non-official debt can be converted.

Box 1: Example of a Trilateral Swap

The first debt-for-environment swap was implemented in Bolivia in 1987, where USD 650 000 of Bolivia's debt (a fraction of a percent of the country's substantial indebtedness) was bought by Conservation International for USD 100 000 (roughly 15 cents in the dollar) in the secondary financial market and retired. In exchange, the Bolivian government agreed to expand protected areas around the Beni Biosphere Reserve by 1.5 million hectares. The Bolivian government contributed USD 100 000 to the protection programme and also received a USD 150 000 grant from the United States Agency for International Development.

Trilateral swaps usually involve relatively small amounts and one-off financial transfers to create an endowment of a trust fund. Trilateral swaps are usually used to finance a portion of running costs of nature protection areas or small NGO non-investment projects. Trilateral swaps rarely have potential to generate a critical mass of resources to support investment projects, e.g. in rehabilitation of deteriorated environmental infrastructure. They also introduce an additional constraint into expenditure planning – interests of the NGO intermediary must be taken into consideration. This may or may not be compatible with the preferences of creditors and/or the Kyrgyz government.

Trilateral swaps have been the remedy in countries with corrupt, dictatorial governments, which could not be trusted. One can argue that the progress that the Kyrgyz Republic is making in building democracy, civil society and improving governance may not make it necessary to take expenditure management out of the hands of the institutions controlled by the government and put it into the hands of an international NGO. Domestic NGOs can and should play the role of watchdogs, but not necessarily intermediaries. International environmental NGOs have so far shown little interest in the Kyrgyz Republic and in other smaller, low-income countries of the former Soviet Union. It is less likely that, in the foreseeable future, they will be willing and able to raise funds to buy the official debt of the Kyrgyz Republic from its creditors.

International experience summarised in Annex 6 speaks for itself. The most sizeable swaps have been bilateral swaps of government debt without intermediaries. A single bilateral swap of Polish debt diverted more debt money for environmental purposes than all trilateral swaps world-wide taken together. Bilateral swaps can generate a critical mass of predictable environmental financing over a longer period of time.

The important progress, which has been achieved already in opening the window for bilateral swaps with Paris Club creditors, makes such transactions feasible in the near future. It should be noted, however, that bilateral transactions can be designed in a way that could accommodate any number of one-time transfers from single swaps of public or private debt facilitated by potential intermediaries. They can also encourage other (non-swap) donations if the facility established for DFES purposes proves to be efficient and reliable.

Typically, bilateral debt reduction programmes result in the creation of institutional structures such as counterpart funds or environmental funds that monitor grant-making programmes. It should be noted that the creation of such an institution is not necessary, especially when the debt swap amount is limited and would not justify the institutional costs.

To date, several developed countries have established special programmes for a debt reduction under the DFES arrangements in different countries in the world. In the case of the Kyrgyz Republic and given the structure of its creditors, two programmes are important:

French Programme – In 1992, France announced the creation of the *Fonds de conversion de créances pour le développement*, ("Funds for Debt-for-Development Swap") the so-called *Libreville Fund*, created with FF 4 billion owed to France by four middle-income countries – Cameroon, Congo, Ivory Coast and Gabon. The Fund provides for conditional debt cancellations on a bilateral basis in exchange for the debtor government setting aside counterpart funds for development projects. The French Treasury is responsible for debt sales subject to a bilateral debt conversion framework established between France and the debtor country.

German Programme – The German government established a debt-for-environment programme after the Rio Summit in 1992. In 1997, the German government set aside USD 160 million to fund cancellation of ODA debt via debt swaps. The bilateral programme is administered by the German Ministry for Economic Cooperation and Development. Debt sales are authorised on a case-by-case basis upon application to the Ministry of Finance of Germany.

1.3 Lessons Drawn from Existing Debt-for-Environment Swaps

A number of countries have implemented debt-for-environment swaps. To date, the largest environmental swap involving conversion of bilateral debt has been concluded by Poland. The mechanism has proven to be valuable and thus deserves special attention.

1.3.1 The Polish EcoFund

In 1991, Poland concluded an agreement with the Paris Club on debt restructuring assuming cancellation of 50% of its debt to Paris Club creditors providing the remaining part be paid off by 2010. Although Poland had the possibility to negotiate different debt swaps within the framework of the Paris Club agreement with creditors, it was the Polish Government decision to insist that only DFES would be requested while some creditors expected debt-for-equity swaps too. In exchange for cancelling an additional 10% of each participating creditor's claims, Poland proposed to finance a local fund with an equivalent amount of hard currency. The Paris Club accepted the proposal to implement a mechanism of allocating up to 10% of debts for the purposes specified in bilateral agreements signed with individual creditor countries.

By 2000, the Polish EcoFund had mobilised resources equivalent to USD 571 million through swaps with creditors and grants from donor countries. This is roughly equal to the value of all other debt-for-nature and debt-for-environment swaps world-wide so far.

In June 1991, the US government, as first, assigned 10% of the Polish debt (about USD 370 million) for the DFES scheme. This allowed the establishment of a special institution that would administer the resources made available through the swap.

In April 1992, the Polish Minister of Finance, acting on behalf of the State Treasury, established the EcoFund with the status of an independent non-profit foundation. The first tranche of money was transferred to the EcoFund's bank account in November 1992. This permitted the employment of the first three staff members, the renting of offices and the start of regular operations. The first grants were awarded by the EcoFund to five projects as early as 1993.

Starting in 1993, the following agreements were concluded: in June 1993, France agreed to swap 1% of its debt, in December 1993, Switzerland agreed to swap 10% of its debt, in 1997, Sweden agreed on 4%, in 1998, Italy on 2% and in 2000, Norway on 10% of the debt conversion.

The amount treated by the Paris Club agreement was equal to USD 29 871 million. Half of this amount was cancelled and an additional 10% was able to be exchanged into swap operations. The 6 agreements with Paris Club creditors already signed have provided USD 571 million available for EcoFund grants in 1992-2010. This represents an average swap rate of 1.9% (the amount of agreements signed divided by the amount treated by the debt agreement of USD 29 871 million). The US contribution was the first and the largest and accounted for 72% of the total.

The money is paid in annual tranches from the state budget to the EcoFund's bank account as Poland's commitment towards the creditor countries. The relevant funds are provided every year in the budgetary act as 'servicing of foreign debt'.

The EcoFund finances private sector investment projects within five priority environmental protection sectors:

- reduction of transboundary air pollution of sulphur dioxide and nitrogen oxides and elimination of the low sources of such emissions;
- reduction of pollutant and eutrophying flows into the Baltic Sea and protection of drinking water resources;
- reduction of emissions of gases causing global climate change (global warming and stratospheric ozone);
- protection of biological diversity; and,
- promotion of waste management and contaminated soil reclamation.

One of the major objectives of the EcoFund is to support the transfer of the best engineering and technological environmental protection solutions from the creditor countries to Poland.

Over the period 1992-2003, the EcoFund awarded grants to over 1000 projects. Usually, the average grant covers about 20% of the project cost. Grant disbursement is followed by strict monitoring procedures during and after project implementation in order to ensure that the beneficiary uses the grant for the agreed purpose and agreed results are achieved. Every project is divided into a number of stages approved on the basis of technical and financial inspections. The grant funds are transferred only after the specific stage is completed and approved by the Fund.

A good indicator of EcoFund's efficiency and credibility is the fact that donors have agreed to provide the Fund with additional grants. So far, two grants of the equivalent of USD 3.9 million have been entrusted to the EcoFund to manage. They were awarded by the government of Norway in 1997 and the government of Switzerland in 2000 (www.ekofundusz.org.pl).

The Polish example shows the importance of clear and credible commitment to economic and governance reforms in winning the interest and trust of creditors. It shows how a concerted effort of the whole government and a smart negotiations strategy combined with a very attractive expenditure programme and a good design of the transaction and institutions can bring spectacular results.

In 1996, the OECD EAP Task Force conducted a performance review of the EcoFund. The report concluded that the EcoFund is best known throughout the region for its rigorous project cycle management procedures, its leveraging of additional financial resources, and its objective and transparent decision-making process (www.oecd.org).

1.3.2 The Bulgarian EcoFund

The National Trust EcoFund (NTEF) of Bulgaria is a legal entity established pursuant to the DFES agreement between the governments of Switzerland and Bulgaria in 1995. As of now, Switzerland is the only source of financing. The Swiss representative, sitting on the Supervisory Board of the Fund, has an

absolute veto right on projects proposed to be financed with funds provided by this source of financing (www.ecofund-bg.org).

The priority areas, financed by the Fund, comprise:

- clean-up of past pollution;
- reduction of air pollution;
- clean water protection; and,
- protection of biodiversity.

By July 2003, the Fund had approved financial support for 58 environmental investment projects; 40 of these have been fully implemented and 18 under implementation. The financial support provided by the Fund had amounted to approximately USD 11 million, while the total cost of the projects supported by the Fund had totalled about USD 60 million. The Fund's share of financing in overall project costs had averaged about 19%. Out of 58 projects approved, 30 are related to air pollution reduction, 15 to water pollution protection and 10 to protection of biological diversity. The greatest number of projects is proposed by municipalities (71% of approved projects; 43% of awarded finance). (REReP, 2003).

Support by the NTEF is provided in the form of grants or loans. In both cases, there are requirements for co-financing by beneficiaries. If the NTEF financing is in the form of grants, the Fund requires co-financing from other sources in the share of 70% of the project value. If the NTEF financing is provided as a loan, it requires a co-financing of 50% of the project value. Cancellation of the above requirements is possible upon a special decision of the Board of Directors after a preliminary consultation with the Swiss Government.

1.3.3 Other

Beside the Polish and Bulgarian experiences, some lessons may be drawn from other countries. The Senegal swap undertaken in 1993 with a third-party participation of UNICEF (Moye, 2001) provides an interesting example. This case study stresses the importance of macroeconomic risks for the success of debt swap arrangements. With the assistance of the ING Bank, UNICEF purchased USD 24 million face value of bilateral debt owed by Senegal to Argentina for a purchase price of USD 6 million (25% of face value). The Government of Senegal agreed to pay UNICEF the equivalent of USD 11 million over three years to support UNICEF projects in Senegal related to development (education, health, sanitation, and water projects). The payment had to be done in domestic currency. However, one month after the debt swap agreement was signed the local currency devalued by 50% doubling the government obligation. Subsequently, the Government and UNICEF agreed to re-negotiate the terms of the transaction. The objective was to balance between the budgetary impact of increased payments in local currency and the need to provide sufficient financing of the programmes. An additional benefit resulting from the debt swap arrangement was Senegal's renewed eligibility for new Argentinian credits.

2. EXTERNAL PUBLIC DEBT PROFILE OF THE KYRGYZ REPUBLIC

This chapter focuses on the analysis of the debt profile and external public debt structure of the Kyrgyz Republic. Most of the Kyrgyz foreign debt is official - borrowed from foreign governments or from state institutions with sovereign guarantees. Thus, this chapter does not discuss debt owed to private creditors in detail. Swapping private debt can always be negotiated on commercial terms with any single creditor.

The chapter also analyses alternative scenarios for potential debt swap revenue under different assumptions of creditors' participation. In addition, the chapter discusses the fiscal capacity of the Kyrgyz Republic to service potential DFES schemes. The chapter ends by identifying priority creditors for potential bilateral DFES negotiations that the Kyrgyz Government could consider approaching with a request for a DFES.

2.1 External Debt

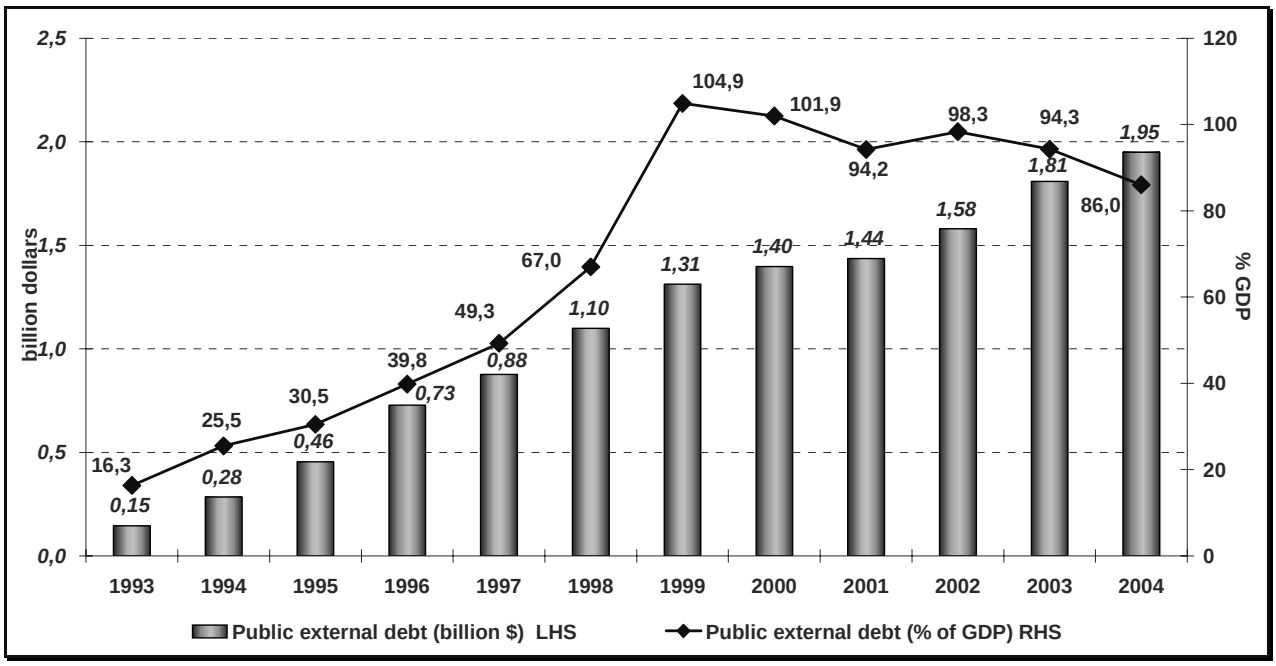
Since its independence, the Kyrgyz Republic has accumulated a substantial amount of foreign debt which it has not been able to service. This is a paradox, as the Kyrgyz Republic began the transition period with no external debt whatsoever[11]. Between 1995 and 1997, the dollar value of its external public debt doubled and by the end of 1999 it had tripled.

2.1.1 External Debt Accumulation

In 1999, the external debt (both public and private) was equal to 134.4% of the Gross Domestic Product (GDP), with an 80% share of its public debt. The stock of public external debt was systematically growing. The ratio of public external debt to GDP increased rapidly in 1999 due to an exchange rate fall after the Russian crisis (Chart 1). Although economic growth was sustained, the nominal exchange rate depreciation of Som/USD by 21% in 1998, 87% in 1999 and 22% in 2000 led to a sharp increase in the domestic currency denominated foreign debt. Hence, the lack of a national debt strategy (created only in 2001) and a reliable monitoring system obscured the costs of the rapid debt accumulation. Therefore, the Kyrgyz Republic faced liquidity problems and debt restructuring was unavoidable. The 2002 Paris Club rescheduling of the Kyrgyz external debt temporarily eased the pressure on managing the external public debt.

[11] This is so because as early as after 1991, the Russian Federation, as agreed with the creditors, offered the other EECCA to take over all official foreign liabilities of the former Soviet Union.

Chart 1. Public External Debt – Stock and Share in GDP



Source: www.minfin.kg

Debt owed or guaranteed by the Kyrgyz Government is mostly concessional[12]: almost all multilateral debts and over half of bilateral debts are of such nature.

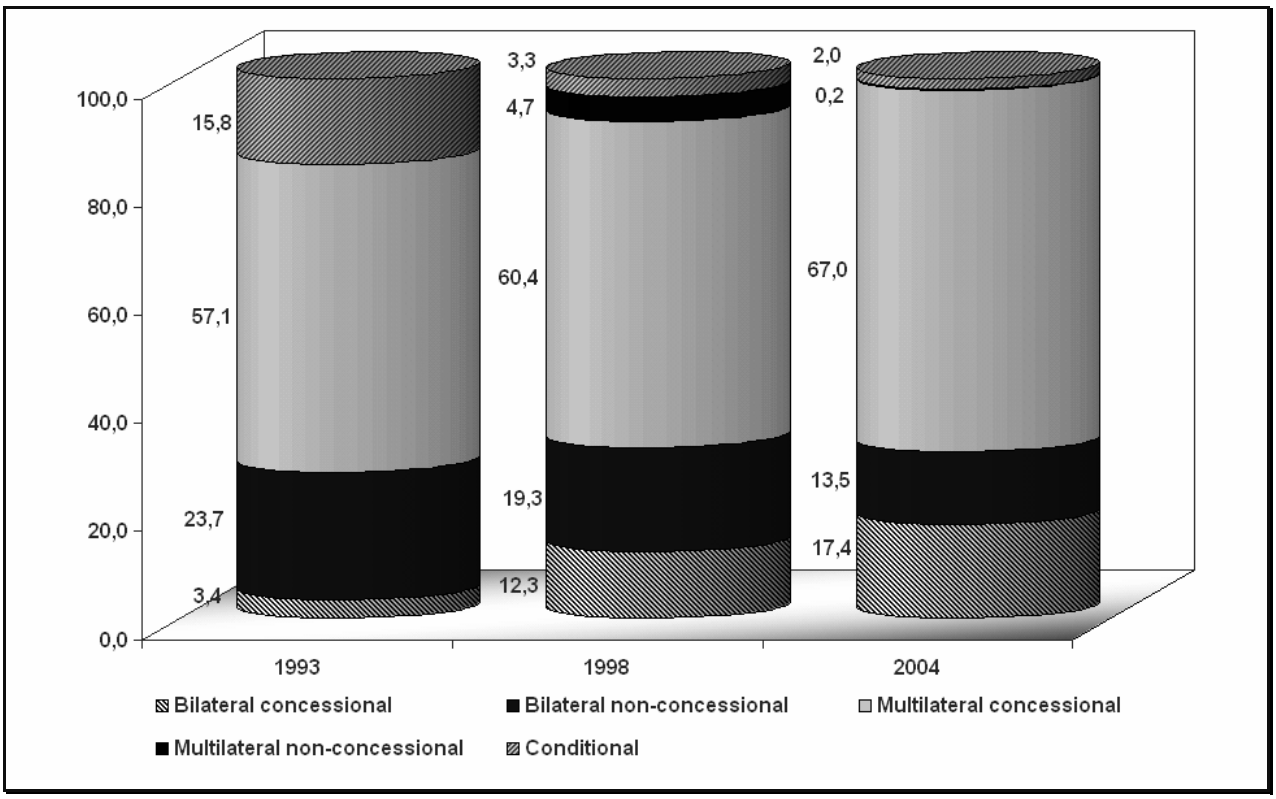
The Kyrgyz Republic is highly dependent on multilateral concessional loans whose share in the public external debt is growing and reached 67% in 2004 (Chart 2). Concessionality of the multilateral debt reduces its share in net present value[13] (NPV) terms to less than 55%. Multilateral non-concessional loans extended since 1995 were limited after the Russian crisis and currently their share is decreasing. However, even in 2000, some non-concessional borrowing was made. It was only in 2000 that the IMF programme introduced a limit on cash fiscal deficit, including the Public Investment Programme (PIP), set zero ceilings on non-concessional borrowing and required submission to the Parliament of a law on contracting new external debt (IMF Country Report 05/32). The share of bilateral debts in 2004 remained at 30% but its composition, compared to 1998, changed as the concessional component grew (Chart 2). The share of contingent liabilities fell to 2% of all public external debt obligations at the end of 2004.

The main declared goal of debt accumulation was to facilitate economic growth and protect declining living standards. Loans were extended to support the balance of payments and finance the PIP.

[12] Considering concessionality or official development assistance (ODA), the OECD definition is applied. This implies a loan carrying a grant element of at least 25%.

[13] The NPV of debt is the sum of all future debt service obligations (interest and principal) on outstanding debt discounted at the market interest rate.

Chart 2. Composition of Public External Debt by Creditor Type



Source: www.minfin.kg

Large current account deficits are the most important factor contributing to the increase in external debt (Chart 3). The break-up of the former Soviet Union resulted in a sharp increase in current account deficits, which hovered at around 10-20 percent of GDP in the first half of the 1990s (IMF Country Report 05/32). In the second half of the 1990s, these deficits further increased exceeding any safety thresholds. The current account deficits were covered through external borrowing implying a rapid increase in external debt.

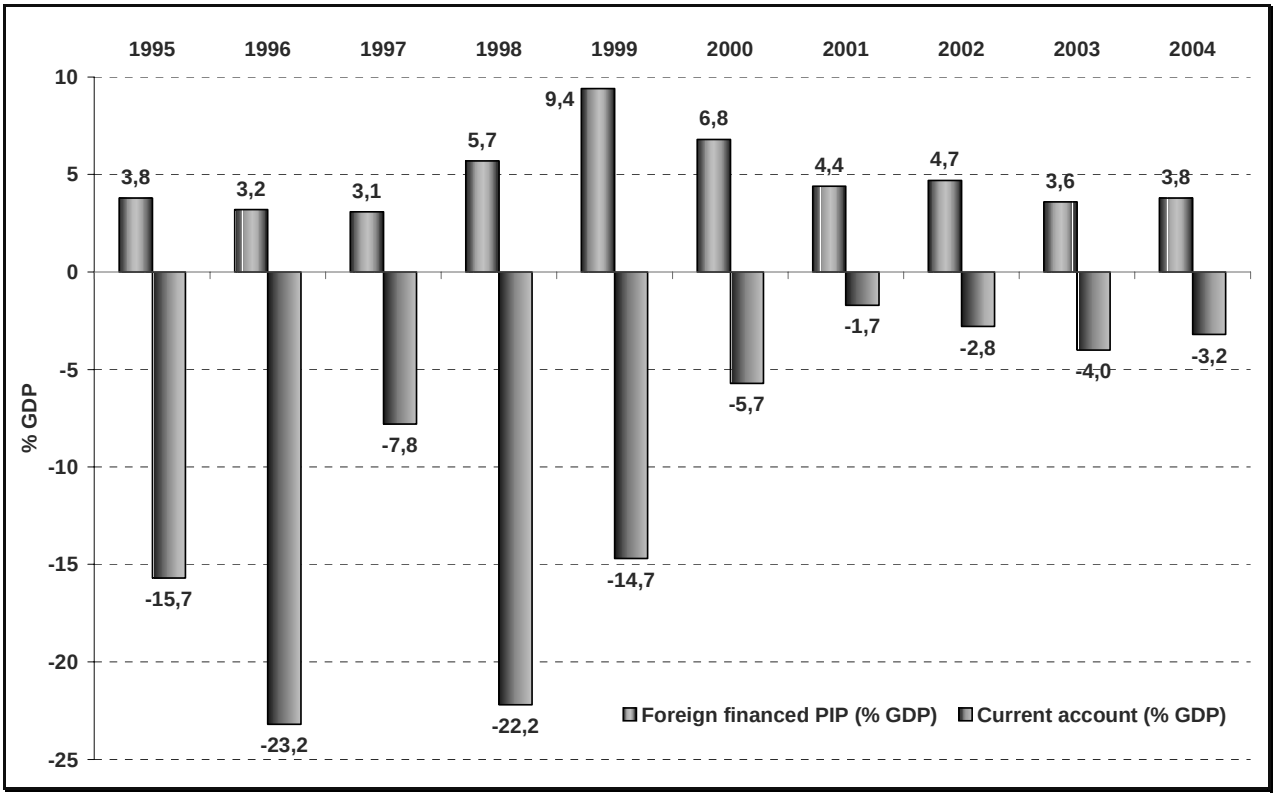
The second factor explaining the dynamics of public external debt was the Public Investment Programme (Chart 3, for more information on PIP see 2.4.1). At the end of 2003, loans from multilateral and bilateral creditors under the PIP were close to 50% of the nominal debt stock (IMF, Country Report 05/32). The PIP externally financed of about 3% of GDP annually in 1995-1998 increased to 9.4% of GDP in 1999 and only since then has it been systematically streamlined. It suggests that coordination within the donor community which financed the public investments was not sufficient to provide safe debt accumulation.

Until the Russian crisis, the stock of the Kyrgyz external debt rose by less than programmed in IMF arrangements but the dollar GDP was far below projections, reflecting slow recovery and sharp depreciation in the exchange rate (IMF, Country Report 05/32). It is admitted that projections were by and large optimistic. Current account deficits exceeded projections because of imports associated with the Kumtor mine construction[14] and the large PIP. The decline in exports to the Commonwealth of Independent States (CIS) and the depreciation of the som against the dollar as a result of the Russian crisis led to an increase in the external debt stock and the debt to GDP ratio far above projections.

[14] Gold related imports were partly financed with Foreign Direct Investment (FDI).

To summarise, at the beginning of the transition period, the debt dynamics were caused by the collapse of trade relations and the negative terms of trade shocks. Then, two factors became more important: fiscal reforms and growth revival took longer than expected and excessive optimism by multilateral investors contributed to the high debt levels (IMF WP/04/93).

Chart 3. Current Account Deficit and PIP External Financing as a Share of GDP



Source: IMF Country Report 05/31.
Note: Current account in 2004 – 9 months only.

2.1.2 Debt Reduction Strategy

In response to the debt problem, in 2001, the Kyrgyz Republic adopted a Debt Reduction Strategy[15] based on the following objectives of the National Development Strategy:

(i) sustainable economic growth;

(ii) institutional development; and,

(iii) social policy and human development.

The Debt Reduction Strategy states that sustainable external debt is a precondition for a macroeconomic stability. The medium-term strategy of the borrowings assumed budgetary capital outlays expressed as a share of GDP to decline, including the PIP. The foreign-financed PIP was expected to be reduced from around 7% of GDP in 2000 to 3% in 2005 - the amount could be higher given the intention to attract grants instead of loans to finance the PIP. The priorities of budgetary capital expenditures are to be formulated

[15] Decree of the Government of the Kyrgyz Republic N 284 on the Mid-Term External Debt Reduction Strategy of 19 June 2001.

based on the potential influence on growth, export and poverty reduction. The strategy assumed the approval of a 5-year PIP updated annually. The bulk of the fiscal adjustment would come from restraining the foreign-financed PIP while at the same time achieving an increase in the state budget primary fiscal surplus (excluding the PIP) from 0.3% of GDP in 2000 to 3.5% of GDP in 2004 and 3.7% of GDP in 2005. To sustain this adjustment, the government intended to increase the tax revenue of the state budget from 13% of GDP in 2001 to more than 15% by 2004. The current expenditures were supposed to decrease from 15.2 to 13.9% of GDP, although the social expenditures were to grow in real terms. The strategy assumed privatisation of the following state companies: the KyrgyzTelecom, Kyrgyz Airlines, KyrgyzGaz and power distribution companies spun off from the KyrgyzEnergo before the end of 2005. The privatisation receipts would be deposited into a special account at the National Bank of the Kyrgyz Republic and at least 75% of these funds would be available for debt reduction only, with the remaining amounts allocated for restructuring of outstanding state enterprises and counterpart funding of foreign financed investment projects. The strategy assumed further debt restructuring following the progress achieved with Russia and Turkey. Non-concessional public debt would be repaid ahead of schedule, if possible, hence shares of state enterprises would be offered to creditors or debt would be bought off at a discount.

As of the end of 2004, the performance against the quantitative targets under the debt reduction strategy was mixed. Capital budgetary outlays as a share of GDP were falling, except in 2002, mainly due to the growth in the foreign-financed PIP component. The PIP was approved with a 3-year perspective only. Progress with the primary balance improvement (excluding the PIP) was sluggish as a result of growing current expenditures, contrary to the debt strategy assumption. The progress with privatisation of big state companies was limited. The privatisation process was weakened as a result of significant revenues generated by the sale of Kumtor gold mine shares (gold layers were transferred to Centerra[16] following an agreement between Cameco (a Canadian company previously operating the Kumtor gold mine) and the Kyrgyz government) which were much higher than expected. As a result, the overall willingness of the Kyrgyz Government to proceed with privatisation decreased. In general, although some improvement was recorded, the privatisation pace was slower than expected.

2.1.3 Debt Sustainability

There are a number of indicators used to measure and analyse debt sustainability: they are all related, but the relationship is not straightforward. The major indicators include: external debt to GDP ratio, debt service to GDP ratio, debt service to exports ratio, debt service to fiscal revenue ratio, NPV of debt. Each of these indicators captures different elements of debt sustainability. It is customary to use the ratio of external debt to GDP rather than the debt stock in nominal terms to assess the burden that external debt can impose on the economy. Broad indicators, such as the debt to GDP ratio and the debt service to GDP ratio compare the debt burden to the ability of the economy as a whole to generate income. The debt service to export ratio links the level of debt service to the availability of foreign exchange earnings in the economy as a whole. The debt service to fiscal revenue ratio links the debt service to the ability of the public sector to generate income. The net present values of debt are used to capture the concessionality of the debt stock and compare debts among creditors with different repayment schedules.

There are some thresholds on ratios derived from empirical analysis conducted as part of the Highly Indebted Poor Countries (HIPC) Initiative (see: Box 2). The original targets were subsequently reduced to provide more of a cushion from exogenous shocks and free up additional resources for poverty reduction. The amended sustainability thresholds are (Press Release No.02/23, Andrews et.al., 1999):

- NPV of debt-to-export ratio of 150%; and,

[16] Centerra is a Canadian gold-mining company which owns 100% of the Kumtor gold mine through its wholly owned subsidiary Kumtor Gold Company.

- NPV of debt-to-revenue ratio of 250%.

Box 2: The HIPC Initiative

The Heavily Indebted Poor Countries (HIPC) Initiative is a coordinated approach to debt reduction launched in 1996 by the IMF and the World Bank. To date, debt reduction packages have been approved for 27 countries, 23 of them in Africa, providing USD 32 billion (net present value terms) in debt service relief over time.

A country is eligible for assistance, if it faces an unsustainable debt burden, beyond available debt-relief mechanisms, implements IMF and World Bank – supported programmes and has developed a Poverty Reduction Strategy Paper (PRSP). If a country's external debt ratio, after traditional debt relief mechanisms, is above a threshold for the value of debt to exports (or, in special cases, the value of debt to fiscal revenues), it qualifies for assistance under the Initiative.

The Kyrgyz Republic does not qualify for the HIPC Initiative.

Countries that qualify are: Benin, Bolivia, Burkina Faso, Cameroon, Chad, Congo, Ivory Coast, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Guyana, Honduras, Kenya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nicaragua, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Tanzania, Uganda, Yemen, Zambia.

Source: www.imf.org

For the group of CIS-7 (see: Box 3), IMF applies less strict thresholds: external debt sustainability problems are signalled by ratios of the NPV of future debt service to exports in excess of 200-220%. Fiscal sustainability problems are indicated by ratios of NPV of debt to central government revenue in excess of 250-280% (Odling-Smee et.al, 2001). It should be stressed that these ratios cannot be directly compared with the HIPC thresholds, since the Kyrgyz Republic has not rescheduled its bilateral debt on Naples terms (see: Box 5), which is a prerequisite for a HIPC treatment.

The public debt burden in the Kyrgyz Republic was relatively high in comparison with the other CIS-7 countries. Table 2 below shows basic data on external debt for this group of countries. Before the 2002 Paris Club restructuring, the level of the Kyrgyz external debt (in net present value terms) was higher than those in the other CIS-7 countries.

Table 2. Basic Data on External Debt for CIS-7 Countries

	2000	2001	2002	2003	1999	2000	2001	2002	2003
	Present Value of Debt/GDP				Debt Service (% Exports)				
Armenia	31.3	30.9	31.5	26.1	12	8	8	8	9
Azerbaijan	18.8	17.4	17.8	19.0	6	8	5	6	8
Georgia	41.7	33.2	40.6	38.1	12	13	8	10	12
Kyrgyz Republic	102.6	87.0	82.6	83.0	20	27	30	25	16
Moldova	88.3	76.1	74.3	92.1	29	18	18	20	10
Tajikistan	94.9	78.3	72.7	60.4	11	8	12	11	9
Uzbekistan	30.5	39.0	44.9	47.9	18	26	27	25	21

Source: World Bank Database: http://devdata.worldbank.org/data-query

The debt situation has improved since the 2002 Paris Club flow rescheduling. However, it remained unsustainable at the end of 2003: NPV of debt to export was 186% and NPV of debt to revenue was 342% (far above the threshold). The last Debt Sustainability Analysis (DSA) done by the IMF suggested that

without further debt rescheduling, debt service to fiscal revenue would increase to levels beyond those before the 2002 Paris Club flow rescheduling (IMF, 2005, 05/47). Therefore, in 2005, a stock operation was applied by the Paris Club and sustainability was restored (Table 3).

Table 3. Debt Sustainability Indicators under the London* Terms Applied in the 2005 Paris Club Agreement

	2005	2010	2015	2023
PV of Debt-to-GDP	49	40	36	30
PV of Debt-to-Exports	138	121	131	132
PV of Debt-to-Revenues	267	195	170	136

**See: Box 5.*
Source: Ministry of Finance.

Although the Kyrgyz Republic does not qualify for the HIPC Initiative, it was included in the CIS-7 Initiative (see: Box 3), where under defined conditions the possibility of multilateral debt restructuring was considered. As stressed in CIS-7 Initiative statements, these countries have the option of requesting multilateral debt relief, relying on existing frameworks, if the full range of traditional debt relief mechanisms employed by commercial and bilateral creditors still leaves some of them with debt levels above the HIPC thresholds (IMF, PR no.02/23). However, at this stage, it seems that the Kyrgyz Republic, due to the recently executed Paris Club debt stock restructuring, does not qualify for this benefit.

Box 3: The CIS-7 Initiative

The CIS-7 Initiative is a common framework for seven low-income countries of the CIS – Armenia, Azerbaijan, Georgia, the Kyrgyz Republic, Moldova, Tajikistan and Uzbekistan – to accelerate poverty reduction and economic growth, while ensuring sustainable fiscal and external debt positions. The initiative was launched in 2002. The role of Initiative participants is to extend support to those countries implementing significant reforms. Assistance could take the form of:

- More concessional financial support, and debt restructuring or relief where needed, in conjunction with strong reform programmes;
- Increased access for CIS-7 countries to industrial countries' markets and promotion of Foreign Direct Investment (FDI);
- Improved coordination between development agencies;
- Support through technical assistance, policy advice, and concessional financial assistance (including grants) in support of the reform efforts.

In addition, bilateral debt restructuring or debt relief should rely on existing frameworks, such as the Paris Club.

Source: www.imf.org

2.1.4 IMF Programmes

The Kyrgyz Republic has received relatively constant net inflows of IMF resources. The presence of IMF funding has been crucial in attracting other credit resources from institutional creditors. The decisions of the Paris Club on debt restructuring were conditional on the existence of an appropriate programme supported by the IMF, which would demonstrate the need for debt relief. Therefore, it seems reasonable to

analyse how this cooperation has been proceeding and to what extent the potential debt burden was forecasted.

In 1993, the Kyrgyz Republic launched its cooperation with the IMF and in 1994, it was the first among the former Soviet Union countries to sign an Enhanced Structural Adjustment Facility (ESAF)[17] programme that aimed at providing a basis for stabilisation and long-term growth. As of May 2005, there were five arrangements signed with the IMF, two of which were not completed (see Table 4). Fiscal policy and debt accumulation were important reasons behind this non-compliance (IMF Country Report 05/32). In completing the first review in 1993, waivers were required for some performance criteria, including public sector and central bank contracting or guaranteeing new medium and long-term external debt. In 2000, quarterly performance criteria were introduced. However, the final reviews were not completed due to many reasons, including the lack of external debt strategy. The external debt strategy, approved in 2001, facilitated application for IMF funds and permitted the country to regain credibility. Hence, the arrangements approved with the IMF facilitated the negotiations and debt restructuring with the Paris Club as the IMF programmes demonstrated the need for debt relief. In order to ensure that the external debt ratio would be reduced, the last programme introduced a target for concessional public borrowing.

Table 4. Financial Arrangements with the IMF

Facility	Date of Arrangement	Date of Expiration or Cancellation	Amount Approved (SDR* million)	Amount Drawn (SDR million)
Standby Arrangement	May 12, 1993	April 11, 1994	27.09	11.61
PRGF Commitments	July 20, 1994	March 31, 1998	88.15	88.15
PRGF Commitments	June 26, 1998	July 25, 2001	73.38	44.69
PRGF Commitments	Dec 06, 2001	March 14, 2005	73.40	73.40
PRGF Commitments	March 15, 2005	March 14, 2008	8.88	1.26

*Note: * The SDR serves as the unit of account of the IMF and some other international organisations. Its value is based on a basket of key international currencies.*
Source: www.imf.org

2.1.5 Debt Treatment Operations

The Kyrgyz Republic has rich experience in debt restructuring. Since 1995, it has repeatedly signed bilateral rescheduling agreements. For example, the Kyrgyz Republic has rescheduled parts of its debt owed to Russia five times since 1994 (Odling-Smee et al, 2001). The devaluation crisis experienced in the middle of 1996 (by almost 50%) led to an abrupt increase in the public debt denominated in domestic currency. As a consequence, there was another agreement signed with Russia on debt restructuring. While providing temporary liquidity relief, these rescheduling operations were typically on non-concessional terms with little attention paid to the country's repayment capacity or comparable treatment of creditors.

On March 7, 2002 the Kyrgyz Republic signed an external debt rescheduling agreement with Paris Club creditors resulting in a non-concessional flow restructuring of USD 102 million out of USD 451 million (see: Annex 2). Following the agreement with the Paris Club, the Kyrgyz authorities successfully completed negotiations with essentially all bilateral creditors on terms comparable to those of the Paris Club. While these agreements significantly lowered the Kyrgyz debt service obligations, the debt stock remained high and negatively affected the economic prospects of the country. The agreement with the Paris Club included an explicit clause on debt swaps to be undertaken on a voluntary and bilateral basis with individual creditors. The swap operations may be debt-for-nature/environment, debt-for-aid, debt-for-equity swaps or other local currency debt swaps.

[17] Later transformed into Poverty Reduction and Growth Facility (PRGF).

The 2002 Kyrgyz Republic agreement with the Paris Club was a standard agreement restructuring flows. It referred to the period when the IMF programme showed a financing gap that could only be covered by debt rescheduling (consolidation period). Payments due to Paris Club creditors in this period were covered by the Paris Club agreement and the payments of these debts were then made on a new schedule.

Box 4: What is the Paris Club?

The Paris Club is an informal group of creditor governments from major industrialised countries (i.e. OECD, including also the Russian Federation) set up in 1956. The Chairman and the Secretariat are provided by the French Treasury. The participation of creditor countries is voluntary. The group meets on a monthly basis in Paris with debtor countries in order to agree on debt restructuring. Rescheduling is a means of providing a country with a debt relief through a postponement and, in the case of concessional rescheduling, a reduction in debt service obligations.

The Paris Club has no legal basis or status. Agreements are reached following a number of rules and principles agreed by creditor countries. The Paris Club framework allows the treatment of the debt issue of developing countries in a co-ordinated way.

There are 19 permanent members of the Paris Club. Other creditors are invited on a case-by-case basis. Any country that has granted government loans or guaranteed credits by the Government or its official agencies to a debtor country which presents a request for a debt restructuring can attend a Paris Club meeting.

The outcome of the negotiation is not a legal agreement but an Agreed Minute signed by creditor countries which is a recommendation to their governments to sign bilateral agreements with the debtor country.

Source: www.clubdeparis.org

Some Paris Club treatments apply to the entire stock of debt from which payments fall due. The intention of a stock agreement is to provide a country with a final treatment called an *exit rescheduling*. Such agreements are implemented in the context of the HIPC Initiative and in other cases for countries having established a satisfactory track record with the Paris Club and the IMF and for which there is sufficient confidence in their ability to respect the debt agreement (www.clubdeparis.org). It is important that stock treatments generate interest payments on the consolidation that are larger than those resulting from flow treatments. As a result, stock treatment provides a long-term debt relief, but debt service relief is smaller in the short-term than for a flow treatment.

While the 2002 Paris Club rescheduling agreement reduced the liquidity problem, it did not provide a lasting relief. With successful implementation of the Poverty Reduction Strategy, the Kyrgyz Republic was given the right to apply to the Paris Club again in 2004 for cancellation of 67% of its bilateral debts on Naples terms (see: Box 5). Stock rescheduling was assumed as a goodwill clause on concesssional terms.

In mid-March 2005, the Kyrgyz Republic held another round of negotiations with Paris Club creditors. Paris Club creditors agreed on restructuring the stock of the public external debt of the Kyrgyz Republic (see: Annex 3). The agreement also included a clause on debt swaps. The Paris Club applied the Evian approach with treatment comparable to the London terms (see: Box 5). The 2005 agreement with the Paris Club ensures long lasting external debt sustainability.

Box 5: Paris Club Approach to Debt Treatment

In 2003, Paris Club creditors agreed on the **Evian approach** to deal with non-HIPC countries. It is provided only in case of default and aims at ensuring long lasting debt sustainability. Therefore, debt treatment is adjusted to individual needs of the country. For countries that face liquidity problems but are considered to have sustainable debt, the Paris Club designed debt treatment on the standard terms presented below.

In 1991, Paris Club creditors implemented a new treatment of the debt of the poorest countries called **London terms**. This new treatment raised the level of debt cancellation to 50%. 23 countries benefited from this treatment in 1991-1994, when these terms were replaced by Naples terms.

In 1994, the Paris Club agreed to implement new concessional debt reduction terms for the poorest and most indebted countries, called **Naples terms**. Eligibility assessments consider the track record of cooperation with the Paris Club and the IMF, a high level of indebtedness, eligibility only for International Development Assistance (IDA) financing and low GDP per capita (USD 755 or less). Under such conditions, stock treatment may be implemented. The level of cancellation is 67% of eligible non-ODA credits (in NPV terms).

Houston terms apply for highly indebted lower-middle-income countries. Non-ODA repayment periods are extended to or beyond 15 years and ODA repayment periods are extended up to 20 years with a maximum of a 10-year grace period; ODA credits are rescheduled at a concessional rate.

Source: www.clubdeparis.org

Apart from the Paris Club arrangement, there is also a political effort to limit the Kyrgyz Republic debt burden within the framework of *mountain countries*. In line with a draft UN resolution of 10 December 2004, there is a possibility of writing off credits incurred by the poor mountain countries under the framework of debt-for-development swap (Annex 4).

2.1.6 Public Debt Structure

At the end of 2004, public and publicly-guaranteed debt of the Kyrgyz Republic amounted to USD 2.1 billion, with only 8.4% share of domestic debt (the Kumtor mine is excluded[18]). The Kyrgyz Republic has had little success in developing the domestic debt market. The stock of external debt amounted to **USD 1.9 billion**. Most of the foreign debt is official – borrowed from foreign governments or from state institutions with sovereign guarantees and multilateral creditors. Of this external debt, **67.2%** was owed to multilateral institutions, with the remaining **30.8%** of bilateral debt and **2%** of contingent liabilities. Table 5 below presents the volume and the structure of public debt as of the end of 2004.

The public external debt is mostly long term in nature. The average interest rates are comparable to rates found in heavily indebted low-income developing countries. External debt consists of multilateral, bilateral and contingent liabilities.

[18] Sometimes the debt of the state-owned Kumtor gold mine was included. The Kumtor gold mine was a joint stock company. Two-thirds of equity was held by the state-owned KyrgyzAltyn JSC. The remaining one-third was held by Cameco of Canada. As Cameco guaranteed Kumtor's external debt, it was decided to omit these liabilities. In 2004, the ownership of the Kumtor mine was transferred to Centerra, a new company listed on the Toronto Stock Exchange. Through the state-owned KyrgyzAltyn, the state took 1/3 of the equity in Centerra and declared to decrease its share to 20%, which happened in 2004.

Table 5. Public Debt of the Kyrgyz Republic as of 31 December 2004

Debt Category and Creditors	Amount, Thousand USD
INTERNAL	**178 612**
EXTERNAL	**1 949 769**
Bilateral	**600 779**
Concessional	**338 395**
China (Export-Import Bank)	13 633
France (Natexis Banques Populaires)	5 684
Japan (Japan Bank for International Development)	248 185
Germany (Bank Kreditanstalt für Wiederaufbau)	38 817
Korea (Export-Import Bank)	16 505
Kuwait (Fund for Arab Economic Development)	15 571
Non-concessional	**262 384**
Debis	350
Denmark (Danish International Development Agency)	5 885
Germany (Hermes Kreditversicherungs-Aktiengesellschaft)	6 715
India	1 024
Pakistan	9 214
Russia	181 817
Turkey (EximBank)	46 267
Uzbekistan	11 112
Multilateral	**1 310 480**
Concessional	**1 306 740**
IMF	206 936
OPEC	6 820
ADB	477 165
IDA/WB	574 220
IDB	25 493
IFAD	9 223
NDF	6 883
Non-concessional	**3 740**
EBRD	3 740
Contingent Liabilities	**38 510**
TOTAL PUBLIC DEBT	**2 128 381**
Notes:	
Paris Club	487 103
Paris Club and Turkey	533 370
Paris Club and Turkey without Japan	285 185
Paris Club and Turkey without Japan and Russia	103 368

Source: Ministry of Finance www.minfin.kg

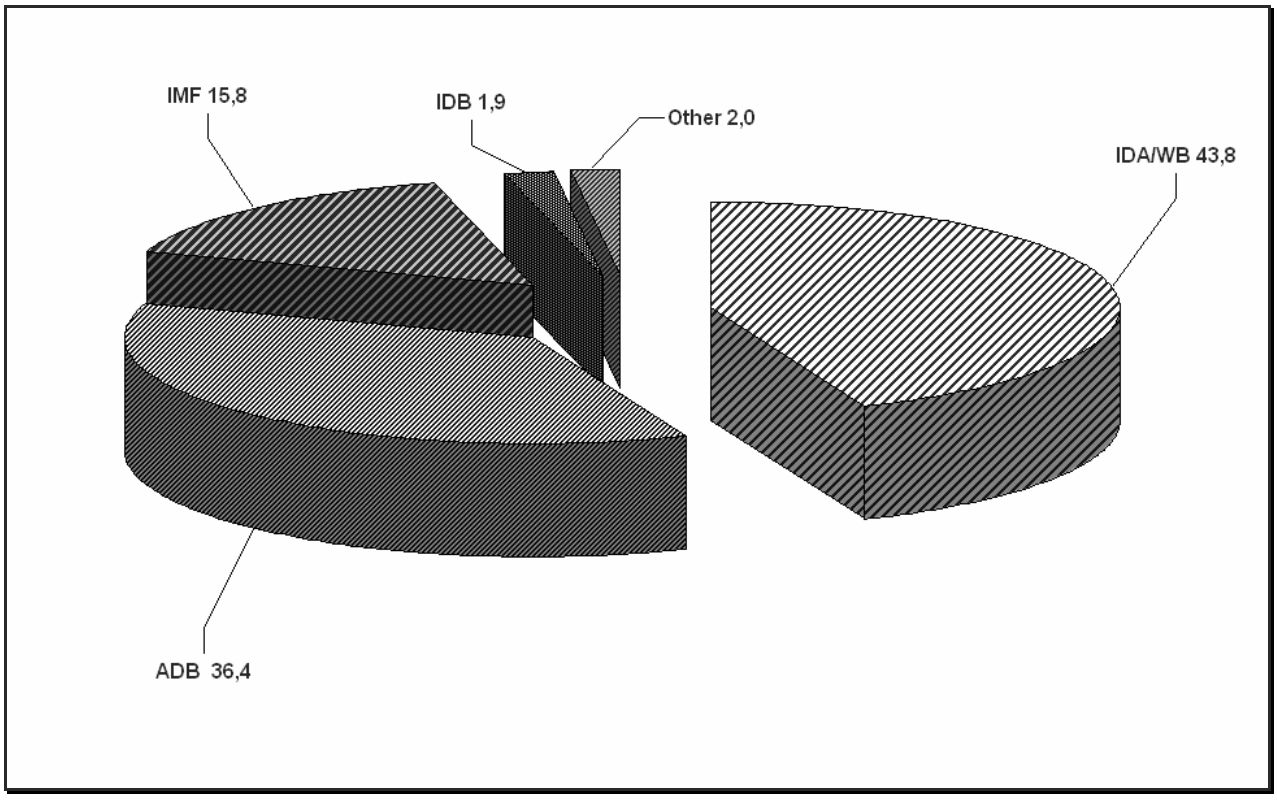
The government extended guarantees to the EBRD and the *Gesellschaft Berlin Bank* to cover the risk connected with credits provided by these two institutions. The EBRD contingent liabilities consist of credits to: *Kyrgyzenergo*, *Kyrgyztelecom* and the *National Bank of the Kyrgyz Republic.* The *Gesellschaft Berlin Bank* extended credits to a company called Zhildiv-Shparta. The government guarantees that these two banks will receive the payments that the Kyrgyz enterprises and the National Bank owe them. This obligation may occur in case of default or liquidity problems of the enterprises.

Public Debt Owed to Multilateral Creditors

Most of the Kyrgyz external debt is owed to multilateral creditors. With the exception of the EBRD credits, all multilateral loans are concessional. The largest creditor is the IDA/World Bank, followed by the Asian Development Bank (ADB) and the IMF (Chart 4). Although this is the biggest component of the external debt, it is not available for conversion as multilateral claims are not subject to rescheduling. Multilateral creditors have a preferential status and, until recently, they have refused to consider any reduction in debt claims (the exception is the HIPC Initiative). The main argument is that multilateral creditors provide financing on concessional terms and offer new lending to debtor countries that would otherwise have no or limited access to credit. Therefore, multilateral creditors argue that multilateral debt should be serviced first when a debtor country experiences difficulties in servicing its debts. It has also been argued that cancellation of multilateral debt would jeopardize the multilateral institutions' ability to raise new financing for lending to low-income countries, if their credit ratings were harmed (UNDP, 1998).

So far multilateral debt has not been subject of debt swap transactions. However, this is not completely impossible. A swap involving multilateral debt could take place in the future but even if it happens, it would probably concern the HIPC countries only. Therefore, the Kyrgyz official debt to IFIs cannot be considered as a candidate for debt-for-environment swaps which significantly reduces the potential swap amount. Nevertheless, IFIs do not oppose swapping bilateral debts.

Chart 4. Composition of Multilateral Debt by Creditors as of End-2004 (%)



Source: Ministry of Finance of the Kyrgyz Republic.
Note: IDB – Islamic Development Bank.

Public Debt Owed to Bilateral Creditors

Until the beginning of 2004, bilateral debt rescheduling agreements were completed as committed under the 2002 Paris Club agreement. Agreements with Denmark, France, Germany, Turkey and the Russian Federation were signed in 2002, with Korea, Japan, China and Uzbekistan in 2003, and with Pakistan and India in 2004. Negotiations with the Kuwait Fund have, however, been unsuccessful [Letter of Intent, 15 December 2003]. As a result of debt restructuring within the Paris Club protocol, the credit payments were delayed to 2006-2023. Hence, the debt servicing payments (principal and interest) decreased by USD 46.9 million in 2003 and by USD 54.2 million in 2004.

In 2005, there was another agreement signed with Paris Club creditors. However, at the time of writing of this report (June 2005) no bilateral agreements have been signed yet. Once such agreements are signed, the detailed description of the credits presented below will change.

China – two credits were extended for the construction of the Kyrgyz-Chinese paper producing factory in the town of Tokmok. Debt was consolidated on 11 July 2003 within the Paris Club protocol of 7 March 2002. The new repayment period is 20 years.

France – In 1996, the French Natexis Bank extended a concessional loan of Euro 3.8 million for 15 years for the rehabilitation of the airport in Osh. The purpose was the purchase of equipment and services for the reconstruction of the control center for managing air transportation at the Osh airport. The outstanding loan was consolidated in June 2002 within the Paris Club protocol of 7 March 2002. The new repayment period was 20 years.

Japan - there were six loans extended by the Japanese Bank for International Development during 1993-1999 for 30 years. The loans were provided for: balance of payments support, technical assistance defined as a component of critical import, support for different sectors of the economy (fuel and energy sector, transport, telecommunications, social and agricultural sectors), reconstruction of the *Manas* airport in Bishkek, reconstruction of the automobile road Bishkek-Osh, and the development of the social sector. In May 2003, an agreement on debt consolidation was signed within the Paris Club protocol of 7 March 2002. The new repayment period was 20 years.

Germany – 10 concessional credits were extended by the KfW Bank (the German Bank for Reconstruction) between 1994 and 2001. The loans were provided for: support for agriculture (with a repayment of 30 years), support to private entrepreneurship (three projects) (40 years), support to the textile industry (30 years), two projects for procurement of buses and materials for printing textbooks (40 years), reconstruction of a hotel and the *Ala-Too* restaurant complex (10 years), mother and child protection (40 years) and a share participation of the Kyrgyz Republic in equity of the KICB Bank (40 years). In June 2002, an agreement on debt consolidation towards KfW within the framework of the Paris Club protocol of 7 March 2002 was signed. The new repayment period was 20 years and the amount of consolidated debt was Euro 738 thousand.

In July 2001, an agreement on assignment of liabilities between the Ministry of Finance of the Kyrgyz Republic and Berliner Aktiengesellschaft Bank was signed (on a non-concessional loan). The agreement assigned the right of charging liabilities from AGB Bishkek (bankrupt) to the Ministry of Finance; restructuring of the non-repaid amount on interest and payments on the principal loan amount within the Loan Agreement No.1 of 28.08.1997 concluded between AGB Bishkek and the Berliner Aktiengesellschaft Bank. The repayment period is 10 years.

In June 2002, an agreement was signed between the government of the Kyrgyz Republic and the government of Germany on the external debt restructuring, consolidating debts for 10 years within the framework of the Paris Club protocol of 7 March 2002.

Korea – credit extended in 1998 by the Export-Import Bank of Korea for 30 years for the development of a quality telecommunications network in the Chui region, providing assistance during the transition to

digital communications and procurement of telecommunications equipment. The loan was consolidated on 20 May 2003 within the Paris Club protocol of 7 March 2002. The new repayment period is 20 years.

Kuwait – two loans were extended by the Kuwait Fund for Arabic Economic Development. First, in 1997, for 18 years for financing the reconstruction and modernisation of the telecommunication network in Osh, and for the installation of digital telephone stations. Second, in 1997, for 20 years for the construction of 150 km of high-voltage lines of 220 kW from the Alai sub-station to the newly-projected Batken sub-station, and for the construction of a new sub-station in Batken. An agreement on the consolidation of these credits has not been achieved.

Denmark – there is one loan from Denmark on the external debt stock extended for *Rehabilitation of Electric Power Supply and Central Heating Systems* by DANIDA (Danish International Development Agency). The agreement was signed in 1998 for USD 7.1 million with a repayment period of 5 years. The outstanding credit was consolidated on 28 May, 2002 within the framework of the Paris Club protocol of 7 March 2002. The new repayment period was 20 years.

India – a credit of USD 5 million was extended in 1995 with a repayment period of 12 years. The purpose was: modernisation and reconstruction of operating industrial enterprises, establishing Indian-Kyrgyz joint ventures and organisation of small industrial enterprises. The outstanding credit was consolidated in 2004 within the framework of the Paris Club protocol of 7 March 2002. The new repayment period was 20 years.

Pakistan – in 1993, a loan of USD 10 million was extended for 7 years for financing the procurement of machinery and technologies for production of medical drugs at the *Aiodan-Pharma* pharmaceutical company. This loan was restructured in October 2000 for 6 years and subsequently consolidated in January 2004 within the Paris Club protocol of 7 March 2002. The new repayment period was 20 years.

Russian Federation – A credit of USD 132 million was extended in 1996 for a period of 13 years. This was a consolidation of previously extended credits in 1992-1993. There was also a loan of USD 6 million extended in 1997 for a period of 10 years for the purchase of raw materials by enterprises from the energy sector, TV and railway companies and by the Ministries of Agriculture and Education. Another loan of $59 million was extended in 2001 for a period of 15 years to restructure the debt of the Kyrgyz Republic to the Russian Federation. In December 2002, an agreement on debt consolidation of USD 63 million for 20 years within the Paris Club protocol of 7 March 2002 was signed.

Turkey – in 1993, the EximBank of Turkey extended a loan of USD 75 million for a period of 20 years for financing the construction of fur and furniture factories, the construction of the Ak-Keme-Pinara Hotel, financing of equipment, purchases of cars and veterinary medication. The outstanding credit was consolidated in October 2002 for a period of 20 years within the Paris Club protocol of 7 March 2002.

Uzbekistan – a loan of USD 16.3 million was extended in 1996 for a period of 15 years. The loan settled trade and economic relations prior to the introduction of correspondent accounts between the National Banks of Uzbekistan and the Kyrgyz Republic. In July 2003, the outstanding loan was consolidated within the Paris Club protocol of 7 March 2002. The new repayment period is 20 years.

There was also a credit extended on a commercial basis by the private company Debis. However, the amount was small and the repayment was completed in February 2005.

2.2 Revenues Forecast from Debt-for-Environment Swap Scheme

In order to assess the feasibility of implementing a DFES, it is necessary to identify the sources of DFES as well as estimate the expected revenue flows that could be generated through the swap scheme. Bilateral debt is the most promising source of DFES. The revenue forecast developed below takes into account existing experience with bilateral debt-for-environment swaps between the Paris Club and debtor countries and is based on assumptions laid down in the 2005 agreement between the Paris Club and the Kyrgyz Republic.

2.2.1 Bilateral Candidates for Debt Conversion

Most of the bilateral obligations of the Kyrgyz Republic are accrued towards Paris Club members (81.1%). Bilateral debt to Paris Club countries (including France, Japan, Germany, Denmark, and the Russian Federation) amounted to USD **487.1** million (Table 5). The biggest creditors are Japan and the Russian Federation, which account for 71.6% of the bilateral debt. There is also Turkey, which is not a permanent Paris Club member but in the case of the Kyrgyz Republic was invited and participated in rescheduling sessions. The share of Turkey in bilateral debt is 7.7%. Bilateral debt to Paris Club countries and Turkey equals USD 533.4 million.

Japan, Denmark and South Korea are not candidates for DFES. These countries rejected such proposals in the past claiming that they do not have any legal basis to conduct debt swap programmes (for example, in Indonesia).

The Russian Federation is a potential candidate, although its record of debt swaps is limited. It seems that Russia would be more interested in debt-for-equity swaps. The Russian Federation has experience with a debt-for-equity swap conducted with Tanzania in 1994 and converting Tanzania's obligations into Russian investment in Sheraton Hotel (Moye, 2001). However, it is not impossible that Russia could join a DFES arrangement. Thus, of the group of countries participating in the 2002 debt rescheduling, the four most promising candidates for swaps are: **Germany, France, Russia and Turkey**.

Paris Club members have agreed on and apply some common rules when they deal with debt swaps. These rules were introduced in 1990. Since then, Paris Club creditors have incorporated debt swap clauses into agreements with low-income and lower-middle-income countries that allow part of the debt covered by Paris Club agreements to be converted through debt swaps on a voluntary basis. These common rules, applied in the case of the Kyrgyz Republic, stipulate that **all Kyrgyz ODA debts are eligible for swaps and non-ODA loans are eligible for conversion of up to 20% of the amounts of outstanding credits as of 6 December 2001 or up to an amount of 5 million Special Drawing Rights (SDR,) whichever is higher** (Agreed Minutes of 2002 and 2005).

Kuwait is the only country which did not agree to consolidate credits extended to the Kyrgyz Republic. The agreement considering the Paris Club protocol has not been signed. Therefore, this debt is not considered available for conversion.

Apart from the above mentioned creditors, there are also bilateral credits extended by non-Paris Club members, namely Uzbekistan, China, Pakistan and India. Uzbekistan and China could potentially have some trans-boundary environmental interest in the Kyrgyz Republic as neighbouring countries. In the case of China, India and Pakistan credits were used for building factories. If any swap with these countries is considered, their first choice would rather be a debt-for-equity conversion. It should be stressed that in general all creditors would be more interested in debt-for-equity than debt-for-environment swaps, for reasons discussed earlier. It can only result from a firm decision of a debtor that a creditor agrees to DFES (Zylicz, 1998). However, under certain conditions, the debtor country itself might be more interested in debt-for-equity swaps (which is also true for the Kyrgyz Republic in some cases), particularly when credits have been extended for purposes which have not resulted in economically successful investments.

Therefore, it seems that liabilities of China, India and Pakistan are not good candidates for DFES. As for Uzbekistan, it may be interested in some swap but probably only after some successful arrangements with other creditors are conducted.

There has been a preliminary agreement concluded with the Turkish EximBank on the debt issue. The proposal is to convert one-third of the debt into grants and the outstanding amount into equity shares. The final decision is still pending.

In conclusion, Germany, France, the Russian Federation and Turkey are the countries that make up the group of potentially good candidates for DFES. They owned **USD 279.3 million** of the Kyrgyz debt at the end of 2004. Debt towards Russia accounts for 65% of this amount.

Germany and France are particularly promising with regard to DFES arrangement due to the presence of special programmes for debt reduction under the DFES arrangements and a track record in such operations. However, France seems to be more willing to conduct such swaps with highly-indebted African countries rather than with countries of the former Soviet Union. As for Germany, there is already one swap discussed between Germany and the Kyrgyz Republic. In 2004, Germany declared that it would write off Euro 750 thousand of ODA debts conditional on the requirement that Euro 350 thousand should be spent on fighting tuberculosis. However, by May 2005, the agreement between the two governments had still not been signed.

2.2.2 Potential DFES Flows

The group of potential creditors that could agree on debt swap arrangements with the Kyrgyz Republic includes: Germany, France, Russia and Turkey. The credits extended by France and Germany (partly) are concessional, therefore are fully eligible for swaps. In the case of non-concessional credits extended by Russia, Turkey and Germany (partly) up to 20% of the amount may be swapped.

Taking into account the existing experience of countries that have conducted DFES arrangements, it is assumed that about 20% of the debt can realistically be expected to be reduced through the swap mechanism[19]. For the Kyrgyz Republic, one scenario of a 20% debt swap has been considered, as this is the maximum settled by the Paris Club for non-concessional loans. Achieving a 20% conversion (on average) would be a great success. The analysis assumes equal conversions in every year which simplifies the calculation but probably is not a realistic scenario. It should rather be expected that allocations will be made in increasing shares which on average would only equal 20%. Table 6 below presents the potential revenues which could be generated through a swap, assuming a 20% swap rate on all repayments until the year 2028 and a few alternative scenarios of participation of creditors. The first swap is expected in 2007.

Calculations presented in Table 6 are based on the assumption that bilateral agreements following the 2005 Paris Club agreement on public debt reduction are signed before the first swap takes place. The ODA credits of Germany and France are to be repaid over 40 years of which 13 years are a grace period at interest rates as favourable as the concessional rates applying to these loans. It is assumed that the non-ODA credits of Germany, Russia and Turkey are to be cancelled by 50% and the remaining 50% are to be repaid over 23 years of which 7 years are a grace period at an appropriate market rate. The first payment on non-ODA credits shall be made in 2012 and the last one in 2028. It means that the more preferential scenario of a stock cancellation is assumed for the creditors holding non-concessional debt (they have also a choice to apply 100% of debt repayment). Therefore, the calculations presented here constitute an optimistic scenario (see Annex III – the 2005 Agreement with the Paris Club).

[19] Bulgaria made a swap with Switzerland reducing its debt by 23%. In Poland, the highest share was 10% for USA, Sweden and Norway (however, in the case of Poland there was an upper limit of 10% altogether), but the share of conversion to potential bilateral debt stock is 1.9% only.

Table 6. Annual Flow of Revenues under Alternative Scenarios of Creditors' Participation (Assuming a 20% Swap of Total Annual Repayments until 2028 or 2045), Thousand USD

	France	Turkey	Russia	Germany 1)	Germany 2)	All	All w/o Russia	Turkey & Germany	France & Germany
2007	10.6	29.1	388.7	50.6	14.9	493.8	105.1	94.5	76.1
2008	12.9	35	485.9	60.8	18.3	612.9	127	114.1	91.9
2009	28.1	78.2	1 003.1	114.2	31.9	1 255.5	252.4	224.3	174.2
2010	35.3	98.6	1 240.8	139.5	49.3	1 563.4	322.7	287.4	224.1
2011	35.3	98.6	1 240.8	169.4	49.3	1 593.4	352.6	317.3	254
2012	35.5	112.4	1 300.1	170	89.8	1 707.9	407.7	372.2	295.3
2013	36.1	140.6	1 417.3	171.5	128.5	1 893.9	476.6	440.6	336.1
2014	36.4	160.3	1 494.5	172.5	126.1	1 989.9	495.4	459	335.1
2015	36.8	182.6	1 578.9	173.7	123.9	2 096.0	517	480.2	334.4
2016	37.3	207.4	1 670.0	175.1	121.7	2 211.4	541.4	504.1	334
2017	37.7	233.6	1 762.7	176.5	119.5	2 330.1	567.3	529.6	333.8
2018	58.4	264.1	1 869.1	314	117.4	2 622.9	753.8	695.4	489.7
2019	78.1	297.9	1 983.9	448.3	115.4	2 923.7	939.7	861.6	641.9
2020	77.5	331.9	2 093.5	446	113.4	3 062.3	968.8	891.3	636.9
2021	77.1	375.9	2 239.2	444.3	111.6	3 248.1	1 008.9	931.8	633
2022	76.7	420.9	2 380.9	442.7	109.8	3 431.0	1 050.1	973.5	629.2
2023	76.3	470.8	2 534.9	441.5	108.1	3 631.6	1 096.7	1 020.4	625.9
2024	76.1	527.4	2 707.9	440.7	106.6	3 858.6	1 150.8	1 074.7	623.4
2025	75.9	588.6	2 889.6	440.2	105.2	4 099.5	1 209.9	1 134.0	621.3
2026	75.9	660.6	3 106.0	438.6	104	4 385.0	1 279.1	1 203.2	618.5
2027	76.1	740.7	3 342.6	439.4	103	4 701.8	1 359.2	1 283.2	618.5
2028	68.5	400.9	1 757.3	412.5	51.1	2 690.2	933	864.5	532.1
						56 403.0	15 915.4	14 756.8	9 459.5
						62 770.3	22 282.6	20 391.5	15 826.7

Notes: [1)] Concessional debt, creditor KfW, [2)] Non-concessional debt, creditor BAB (Berliner Aktiengesellschaft Bank). Source: Ministry of Finance data, own calculations.

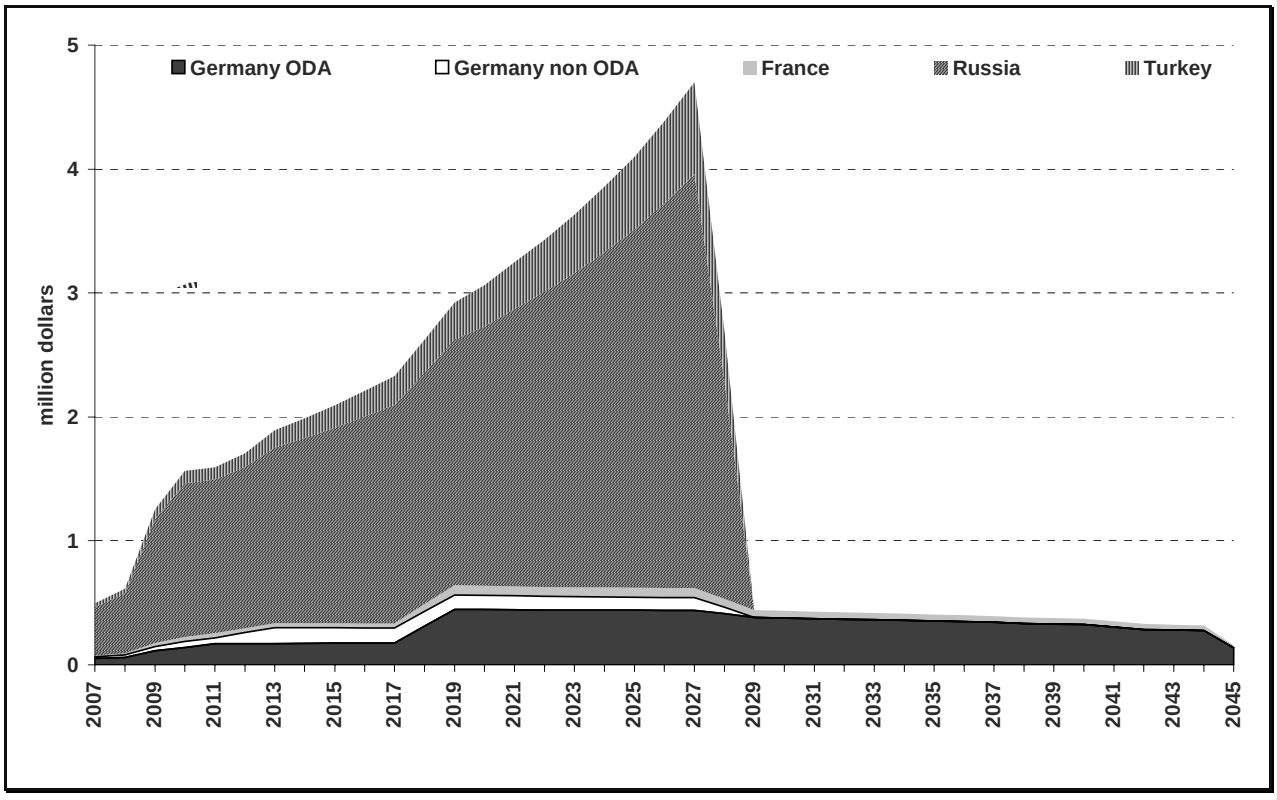
It is assumed that two time frameworks are potentially feasible: (1) 2007-2028 and (2) 2007-2045. It will take time to sign all bilateral agreements and prepare the first swap transaction; therefore, it is assumed that the first swap could take place in 2007 at the earliest. The non-concessional debts of Germany, Russia and Turkey will be paid off in 2028. Therefore, this year is set as the upper limit for the first scenario. With application of the 2005 Paris Club agreement, all concessional debts are supposed to be paid off by 2045, thus this is the second upper limit considered.

Annual flows presented in Table 6 are calculated on a gross basis, that is they do not consider institutional costs connected with servicing the swap operation. If an institution to service swap operations is set up (such as in Poland or Bulgaria), additional calculations should be made to account for the costs of running an institution (for more information on this issue, see Section 4.2).

Probably not all potential creditors would agree to swap their credits. Those who agree would do it at different times and in different amounts, therefore the real flows would differ from the calculations presented above. Nevertheless, the **main conclusions** emerging from the above analysis show that**:**

- The largest creditor in the group of potential candidates for DFES is Russia but it is also probably the least interested in a DFES. Russia might be more interested in a debt-for-equity swap. Therefore, the potential Russian participation remains a question mark. Without the Russian presence, the potential flows decrease to USD 16 million.
- The next largest creditor in this group is Turkey, which is also not particularly interested in debt conversion operations and has not undertaken such swaps in the past. A swap with Turkey could generate about USD 6.5 million until 2028. Without Turkish participation, there are only France and Germany which could be expected to become interested in swapping debt. Swaps with France and Germany could generate about USD 9.5 million until 2028 (when all German non-concessional debts are paid off) or USD 15.8 million until 2045.
- The 2005 Paris Club agreement resulted in changing the pattern of the debt repayment into a progressive one. With the participation of the four selected countries, the amount available annually will increase from USD 0.5 million to almost USD 5 million. Most realistically however, with the participation of France and Germany only, the available amount will grow from USD 76 thousand in 2007 to about USD 400 thousand annually in 2011-2020 and above USD 600 thousand in 2021-2028. If on the other hand, only Turkey and Germany participate, this would generate amounts growing from around USD 100 thousand in 2007 to over USD 1 million in 2023-2028. Taking into account that this is the likely maximum (20% swap of total repayments) and comparing these numbers with the value of the projects financed within the Public Investment Programme in the Kyrgyz Republic, these are not significant amounts.

Chart 5. Schedule of Potential Revenue of a 20% Debt Swap for the Kyrgyz Republic for 2007-2045 (in Million USD)



Source: Ministry of Finance. Own calculations.

The potential revenue flows from debt swap could additionally decrease, if the Kyrgyz Republic chooses to set up a special financial institution, such as the EcoFund in Poland or Bulgaria to manage the swap resources. The operational costs could consume a significant part of available funds, especially in the first years of operation. Therefore, given the limited potential flows available for swaps, different institutional options should be considered (see: Section 4.2).

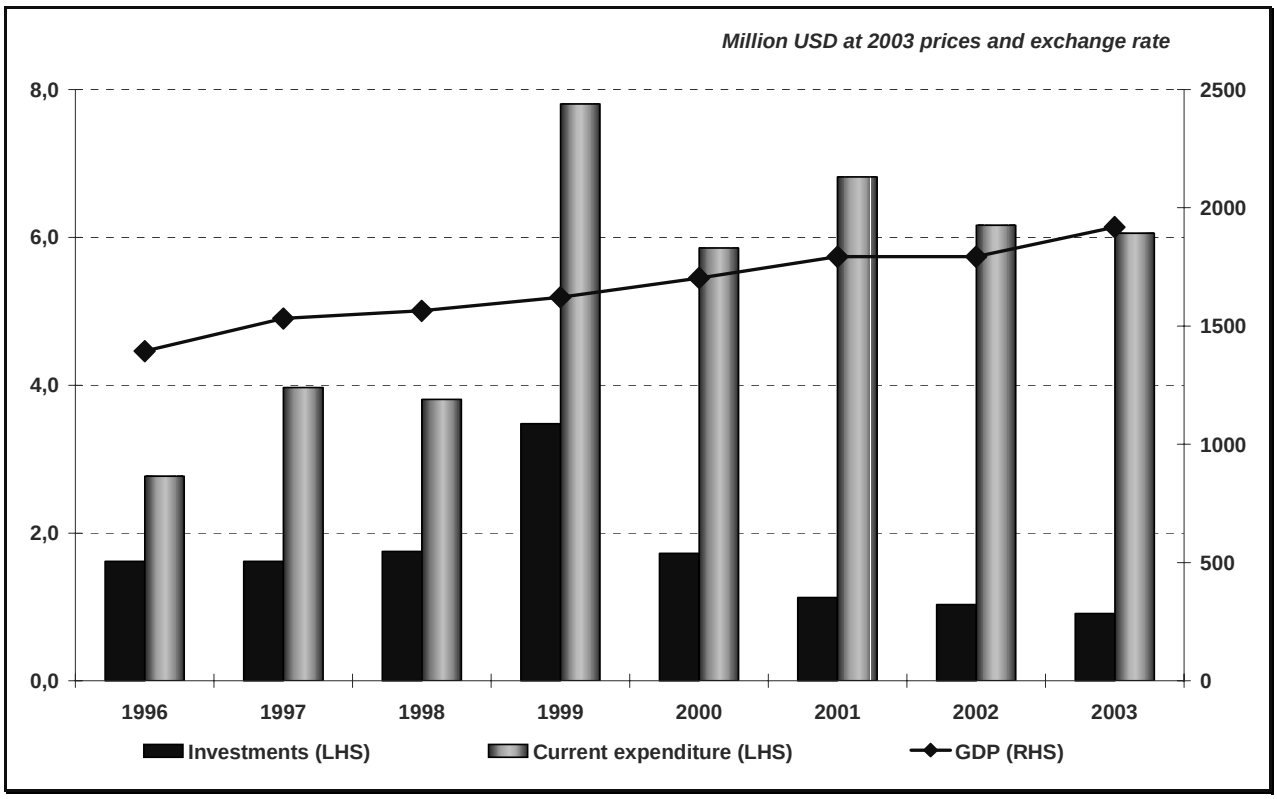
There is a chance though that potentially available revenue would be supplemented by donors through technical assistance or additional grants. However, such a situation could be more likely only after the mechanism applied gains sufficient reputation and credibility, as evidenced by international experience from Europe and from well performing debt-for-environment swap funds in Latin America, Africa and Asia.

In conclusion, a **DFES scheme is feasible and relevant for the Kyrgyz Republic**. However, the situation is not comparable with that of Poland or Bulgaria, and not even with Georgia. Yet, there is some debt which could realistically be considered for a swap. Although, the potential resources are limited, given the low level of domestic public environmental expenditure in the Kyrgyz Republic (see Section 2.3.), any additional resources, if appropriately targeted, could bring benefits to the country. Given the above revenue forecast, it seems that the necessary financing which would be needed by the Kyrgyz Republic would be in the range of its financial abilities. Due to the relatively small amounts of DFES, the potential inflation risk is also limited.

2.3 Present Environmental Expenditure

Environmental expenditure consists of two main components: capital and current expenditure. Capital expenditure includes investment expenditure and expenditure on measuring, monitoring and control equipment. Current expenditure, classified by the European Union as administrative costs, include such items as personnel costs, operation and maintenance costs, transport, spare parts, chemicals.

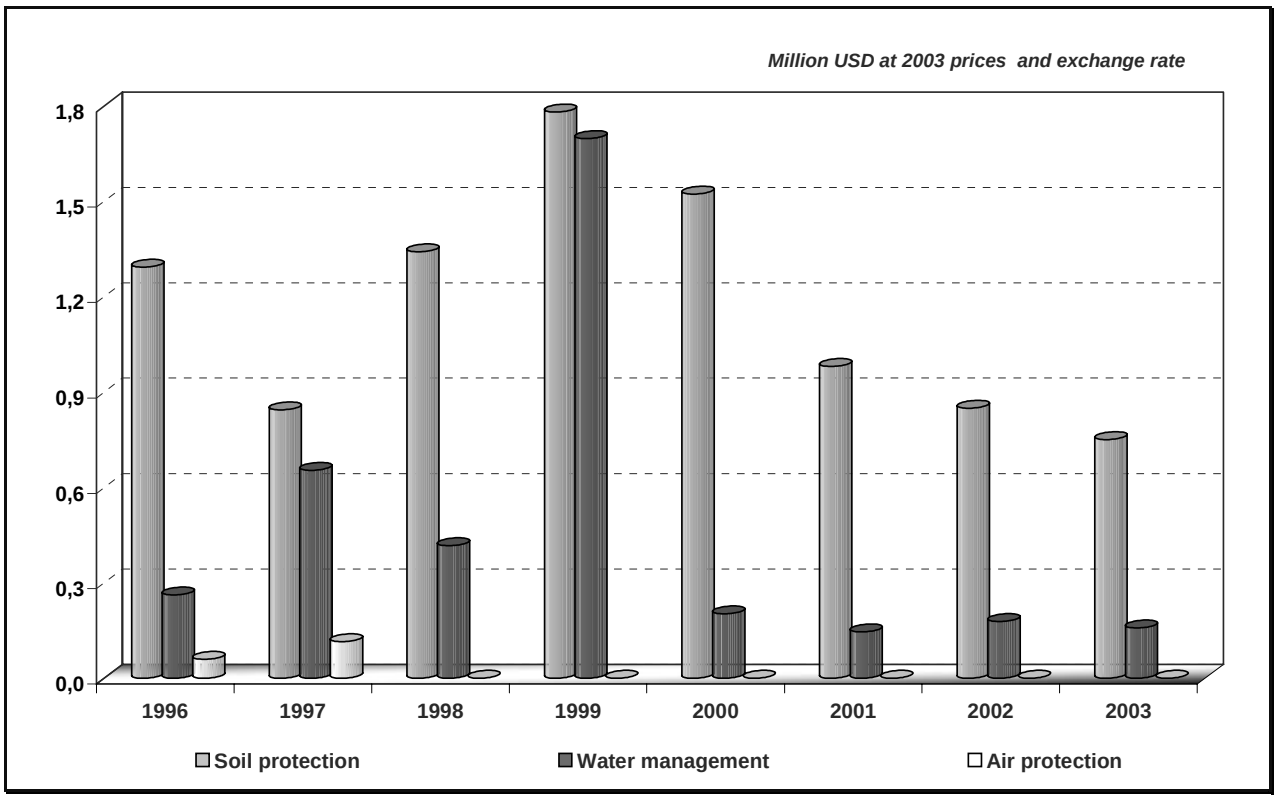
Chart 6. Environmental Expenditure in the Kyrgyz Republic, 1996-2003



Source: National Statistics Committee.

According to the most recently available data for 2003, the total environmental expenditure in the Kyrgyz Republic amounted to about USD 7 million, of this about USD 900 000 was spent on investments and the rest on current expenditure. In recent years, capital investment expenditure for the environment in the Kyrgyz Republic have constituted as little as 0.048% of GDP. Moreover, as a share of total investments (or gross fixed capital formation) in the country in 2003, environmental investments constituted about 0.3%. This is a critically low level. Over the past years, the Kyrgyz Republic has experienced significant difficulties in financing environmental expenditure, and particularly investments in environmental protection projects. There are a number of reasons for this situation, among others: the consequences of the financial crisis in Russia and difficulties in reducing public expenditure in other domains. As a result of these factors, the country practically ceased to finance new environmental investment projects and considerably reduced the number of modernisation projects in the late 1990s. In practice, only the current expenditures of the Ministry of Ecology and Emergencies have been financed from the State budget. In the Public Investment Programme for 1999-2001, the share of environmental expenditure in total expenditure was 3.8%. Since 2000, investment expenditure for environmental protection projects has been steadily decreasing (see Chart 6) while current expenditure remains high. The rapid increase in current expenditures recorded in 1999 is presumably related to the fact that expenditure to counteract the effects of emergency situations was included in the environmental protection sector. When analysing the reasons for the decrease in investment expenditure in different sectors, it might be helpful to use Chart 7.

Chart 7. Capital Environmental Investment Expenditure by Sectors, 1996-2003



Source: National Statistics Committee.

Enterprises that finance air protection investments have stopped any investments in this field since 1998. Investment expenditure for water protection dropped from a record-breaking level of USD 3.4 million recorded in 1999 to USD 0.9 million in 2003.

Table 7. Breakdown of Environmental Capital Investment Expenditure, 1996 - 2003

Capital Expenditure (Thousand USD at 2003 Prices and Exchange Rate)	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
	16 14.3	**1 612.5**	**1 752.5**	**3 477.2**	**1 724.8**	**1 126.2**	**1 027.7**	**908.7**
Water Management	262.1	6 54.0	416.4	1 697.0	202.6	145.6	178.4	157.9
Wastewater Treatment	226.4	584.1	393.5	163.0	202.6	145.6	178.4	157.9
Other Expenditure for Wastewater Systems	35.7	69.9	22.9	1 533.9	0.0	0.0	0.0	0.0
Air Protection	59.6	114.8	0.0	0.0	0.0	0.0	0.0	0.0
Soil Protection	1 292.7	843.7	1 340.7	1 780.2	1 522.2	980.6	849.3	750.7
Landslide and Erosion Protection	1 185.4	698.9	1 272.1	332.7	60.2	0.0	95.2	244.9
Slope Consolidation	107.2	109.8	68.6	1 294.4	1 300.5	662.6	585.2	350.2
Anti-erosion Afforestation	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soil Reclamation	0.0	30.0	0.1	0.0	0.0	0.0	0.0	0.0
Anti-erosion Activity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.6
Hydropower Station Protection	0.0	0.0	0.0	1 53.1	161.5	318.0	168.9	59.5

Source: National Statistics Committee.

The details on the allocation of funds by individual sectors, presented in Table 7 above, show that almost 83% of investment expenditure is assigned to measures aimed at counteracting the effects of emergency situations, i.e. “soil protection”. Undoubtedly, this function is very important for the country; however, it has dominated the environmental protection sector, in the strict sense of the word.

One source of financing environmental expenditure in the Kyrgyz Republic is the Environmental Funds (one Republican and 9 local funds). The system of environmental funds in the Kyrgyz Republic was established by a Presidential Decree of 12 July 1992 and 21 July 1992 (with subsequent amendments). Environmental Funds are capitalised through pollution charges and fines. The revenue generated by these charges is allocated between the 2 levels, with 25% of the revenue transferred to the Republican Fund.

Table 8. Revenue and Capital Investments Expenditures of the Kyrgyz Environmental Funds, 2001- 2003

	2001	**2002**	**2003**
Total Revenue (USD)	565 554	490 206	484 493
Capital Investment Expenditures (USD)	246 914	285 472	314 232
% of the Revenue	43.7	58.2	64.9

Source: Ministry of Ecology and Emergencies.

Table 8 shows the total revenue of the Regional Funds and the Republican Fund taken as aggregate. On the revenue side for 2004, the revenue of the Environmental Funds was estimated at USD 470 thousand (according to data available from the Ministry of Ecology and Emergencies). Preliminary data show an increase in the share of investment expenditure of all Environmental Funds, although current expenditure remains very high in comparison with similar funds in other countries, such as Poland, for example. Polish

environmental funds spend not more than 5% on current expenditure. Until the year 2000, the Kyrgyz funds practically did not finance investments in environmental protection projects; they only covered current expenditure, particularly those of the local administration of environmental protection (nearly 50% of the total), and provided some small amounts for training and education.

Data on investment expenditure of the Regional Environmental Funds (excluding the Republican Fund) were obtained for 2004 only. In most cases, financial support was provided for tree planting and for creating urban greenery, which represents 46% of total Funds' expenditure. The second largest group of investment expenditures was dedicated to municipal landfills (26%). Next come air protection (13%), improvements of operations of wastewater treatment plants (10%), and improvements of sewerage systems (8%).

In November 2004, a new system of pollution charges was introduced by a resolution of the Cabinet of Ministries of the Kyrgyz Republic. Pollution charges have been diversified depending on the natural value of the area affected and the impact on transboundary pollutant transport (location of the area affected in relation to state borders). If a pollutant concentration exceeds the maximum allowable limit, the charge is increased fivefold. The Ministry of Ecology and Emergencies expects the revenue from pollution charges to double in 2005.

Foreign aid is a very important source of financing of environmental protection projects. According to data obtained from the Ministry of Finance, foreign donors have provided or will provide an amount of over USD 147 million in 1996-2007 for projects already agreed upon. Of this amount, USD 69 million is allocated for water supply, irrigation systems, and modernisation of sewerage systems. The projects related to energy supply and renewable energy sources will receive USD 69.7 million. Relatively high foreign aid funds have been allocated for biological diversity protection projects and programmes. The aid programmes are discussed in detail in the chapter on the expenditure programme for the potential DFES.

In conclusion, environmental investments in the Kyrgyz Republic have been extremely low over the past years and have been steadily decreasing. In 2003 (the baseline year), the level of environmental investments was less than USD 1 million. If contrasted with the level of revenue that can be generated by potential DFES, under the most optimistic scenario, the DFES resources could make a significant additional source for environmental protection in the Kyrgyz Republic. Under the pessimistic (as well as the most realistic) scenario however, the expected annual flow of DFES resources will remain at levels lower than the baseline investment expenditure. However, given that a number of important but not urgent environmental projects have remained unfunded over the years (due to other social priorities or because of the fact that environmental projects are often of regional or global public goods character and do not get financed in the absence of international transfers), the availability of DFES resources could help such projects get implemented. In either case however co-financing will be required.

2.4 Fiscal Capacity to Service a DFES Scheme

In order to assess the fiscal capacity of the Kyrgyz Republic to service a DFES scheme, we need to answer a few questions:

- Is there any risk for external debt sustainability caused by public investments?
- Is there an environmental component in the PIP?
- Is there a possibility to redirect investments in the medium term to environmental projects?
- What is the scope for budgetary co-financing of investments financed with DFES, given the current investment policy?

In this section, we look at the current public investment policy as a source of insight as to the capacity of the Kyrgyz Republic to find resources to service obligations under a potential DFES. In answering the above questions, it should also be noted that there already exist a certain number of constraints, which cannot be changed even in the medium term. In the first place, there are a number of investment projects

already implemented which incur operational and maintenance costs which will have to be financed in the future. Second, the scope for co-financing from the budget is constrained by already accrued investment obligations, social expenditure and debt servicing. These and other constraints need to be clearly accounted for in the analysis of the debt servicing capacity of the Kyrgyz Republic.

2.4.1 Current Public Investment Projects

In the past, the majority of public investments was externally financed, mainly with foreign loans. Domestically-financed public investments include: (i) co-financing of externally financed programmes; and, (ii) capital expenditures not connected with foreign credits and their objectives.

The Kyrgyz government annually spends about USD 80-95 million within the PIP (Table 9). Annual disbursements of external finance on the PIP averaged over USD 70 million. Over 80% of the PIP was financed by external sources with an increasing share of grant financing (from 1% in 2001 to 10% in 2003), still below the 50% threshold set by both creditors and the Kyrgyz Government. The sources of external PIP financing include funds provided by multilateral donors (69%) and bilateral donors (31%) (MoF, Investment Policy). The main donors are the ADB, the World Bank and the German and Japanese governments.

Table 9. Public Investment Programme – Scope and Structure

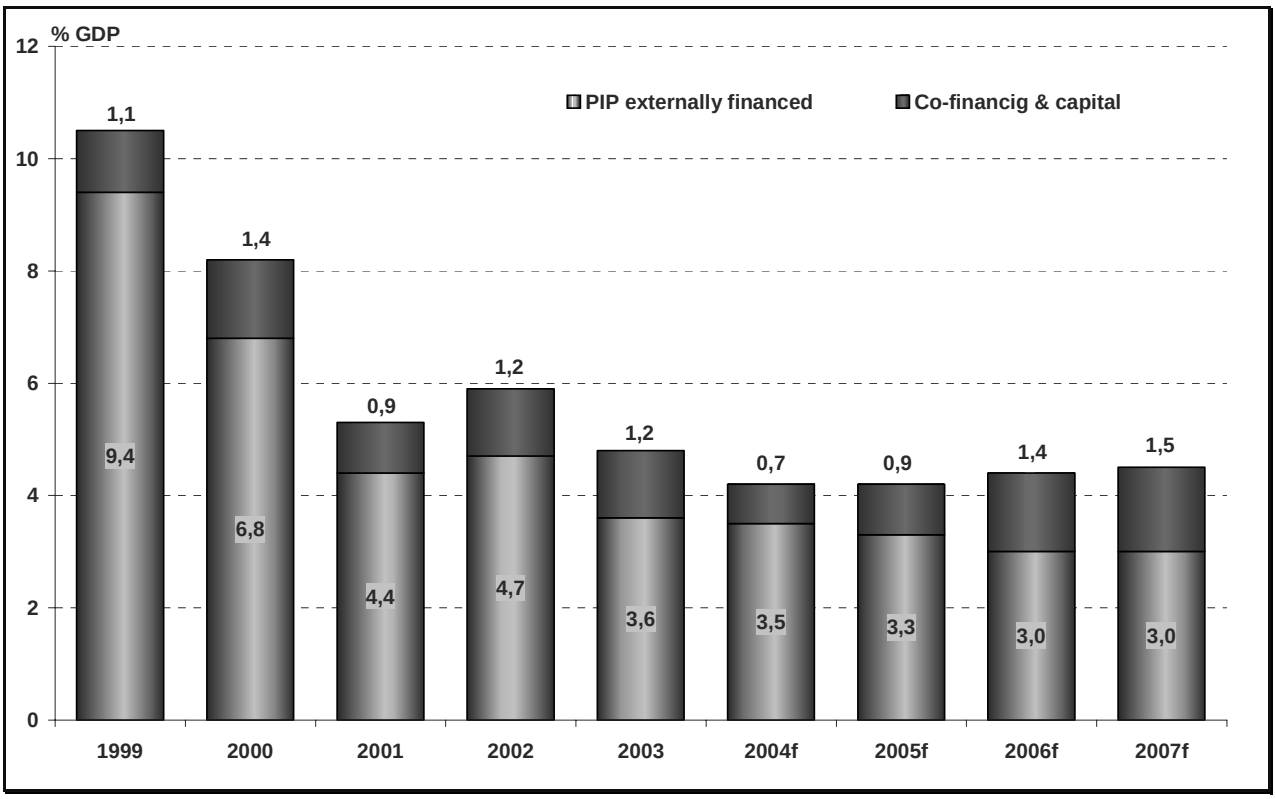
	2001	2002	2003	2004	2005F	2006F	2007F	2008F
PIP mln KGS	3 893.1	4 462.1	3 850.0	4 203.8	5 250.0	5 640.2	5 560.1	3 399.1
PIP mln USD	80.4	95.1	88.1	101.3	119.3	128.2	126.4	77.3
Structure %								
External Sources	83.5	82.5	80.6	84.2	85.7	84.5	82.8	77.6
Internal Sources	10.9	10.4	6.8	6.1	8.5	9.8	10.8	10.9
Capital Expenditure	5.7	7.1	12.6	9.7	5.9	5.7	6.4	11.5

Note: F- forecast.
Source: Report on Official External Aid to the Kyrgyz Republic for the Period 2002-2004, I 2005 p. 25, MTBF 2005-2007, MTBF 2006-2008.

The main areas financed by the PIP are: infrastructure, social infrastructure and private sector financing. The division of the PIP along these strategic priorities reflects the objectives of the National Poverty Reduction Strategy (NPRS).

At the end of the 1990s, the scope of the PIP had been systematically increasing. The PIP reached its maximum of 10.5% of GDP in 1999 (including 9.4% of GDP externally financed) and led to an IMF programme suspension. As a result, special limits were set in the next arrangement. The PIP was projected to streamline to a targeted 5.5% in 2002 and 3% in 2005 (Mathieu, 2004). Since then, the PIP has crossed the planned limits and was supposed to be equal to 4.2 % of GDP in 2004. Some further streamlining of the externally financed PIP is planned, whereas the domestically financed public investments are expected to grow. Progress should be facilitated by medium-term budgetary planning and the IMF arrangement. Nevertheless, some risk for debt sustainability from public investments remains and has to be permanently monitored.

Chart 8. Public Investment Programme Components as a Share of GDP



Source: *Source: Report on Official External Aid to the Kyrgyz Republic for the Period 2002-2004, I 2004.*
Note: f- Forecast.

In 2004, for the first time the government prepared a Medium Term Budget Framework (MTBF) for the period 2005-2007 with a detailed description of planned developments in the PIP and external debt. The main assumptions were as follows:

- Over the medium-term, the target of the government policy is to seek borrowing on concessional terms, to increase the share of grants, to remain below the Poverty Reduction and Growth Facility ceilings and to prioritise investment expenditures towards the National Poverty Reduction Strategy (NPRS) areas.
- During 2005-2007, the disbursement of external PIP financing is expected to average USD 95 million annually, including credit financing which will average USD 77 million.
- In 2005-2007, external credit financing of planned new public investment projects is USD 104 million. For the same period, grant financing of the PIP is planned at USD 51 million.
- The share of the PIP co-financing from the budget is expected to grow, so are capital expenditures.

Recently, some public investments have been made off-budget. The 2005-2007 Medium Term Budgetary Framework includes grant-financed capital expenditures, and it is assumed that an increasing share of all external project financing will be included in the Annual Budget Law in 2005-2007.

The projects under implementation were signed a few years ago and the major share of the public investment spending over the next three years will be on projects which are either on-going or for which funding commitments have been negotiated or are in the process of negotiation. The share of new projects financed through the PIP will grow from 2.4% in 2004 to 44.5% in 2007. The planned project portfolio in

2004-2007 includes 25 new projects, with 18 projects financed through credits and 7 through grants. Thus, the project portfolio is already defined.

Although many projects are being concluded, the value of new projects externally financed through credits will grow from about 74.3 mln USD in 2004 to 83 mln USD in 2007. Therefore, donor financing of the PIP is not decreasing over the medium-term. Domestic financing of the PIP is also planned to grow. Considering fiscal difficulties, the shortage of resources to meet the domestic financing requirements may affect the timely completion of projects and cause arrears on co-financing. Another risk is the extension of budgetary guarantees to avoid limits on external PIP financing.

The IMF programme assumed that the streamlining of existing projects and inclusion of new projects under the PIP will also take into account the ability to cover the operation and maintenance costs once these investments mature (Letter of Intent Nov 16, 2001). Thus, PIP financing should include expenditure for the maintenance and depreciation of new infrastructure. To date, such a use of funds has not been included in overall project expenditure (MoF, Investment Policy). Within the 2005-2007 MTBF, for the first time, the Ministry of Finance has calculated the recurrent cost implications of the PIP projects. Although calculated, these costs have not been incorporated into the annual recurrent budget yet. With the majority of PIP expenditure in recent years spent on infrastructure (particularly transport) adequate resources allocated to maintaining this infrastructure in the future will be necessary.

It should be stressed that this strategy of public investments remains beyond the fiscal capacity of the Kyrgyz Republic. Only with the last Paris Club debt relief did it become possible to close the financing gap.

In prioritising alternative investments, it would be necessary to analyse the impact of the PIP on economic growth, poverty reduction and labour. Currently, there is no quantitative method to evaluate these relationships and clear guidelines are still not available. This is a critical issue as the government admits that the rapidly expanding foreign borrowing to finance the PIP did not generate sufficient growth to avoid the external debt problem. To date, it is not clear to what extent the PIP attracts private investment and stimulates economic growth. It is only believed that interrelated projects stimulate development of the economy but this theory has not been verified. In the long run, the PIP definitely stimulates growth, especially those investments in social infrastructure such as education and health. In the short term however, the result is debt accumulation and high dependence on external borrowing. Actually, economic research is also inconclusive in this respect[20].

Assuming the lack of access to credit on the financial markets, concessional credits remain the only available option for public investment financing.

2.4.2 Project Portfolio

In 2002-2004, 38 projects were implemented within the PIP, including 33 financed through credits and 5 through grants. Table 10 below presents the list of these projects.

The PIP project portfolio is formulated in advance. The current portfolio was formulated mainly for the period 1998 and 2001. In 2002, two projects were launched, in 2003 – three new projects and in 2004 – five new projects started. As a result of concluded agreements, seven new PIP projects will start in 2005 (Table 11). The number of newly-launched projects is growing along with their total value.

[20] There is even no agreement on the public infrastructure investments and economic growth relationship. The impact is positive in OECD countries, but the relation is not significant for developing countries [i.e. Sala-I-Martin (1996), Devarajan et.al. (1996)].

Table 10. Public Investment Programme in 2002-2004

Donor	Project Title
CREDITS	
World Bank	1. Registration of rights on real estate 2. Consolidated structural adjustment credit (CSAC) 3. Health care sector development 2 4. Financing of rural development 2 5. Rehabilitation of irrigation systems 6. In-farm irrigation 7. Emergency actions in case of flooding 8. Sanitation and water supply in rural areas [started in 2002] 9. Electric energy supply and central heating systems rehabilitation (additional loan) 10. Municipal transport 11. Support to private businesses 12. Technical assistance under the CSAC programme [started in 2003] 13. Technical assistance for financial sector reforms 14. Modernization of the payment and banking system [started in 2004]
WB/ IFAD	15. Support to ancillary services in agriculture 16. Sheep breeding development
ADB	17. Regional development of agriculture 18. Bishkek – Georgievka motorway reconstruction 19. Provision of infrastructure services at municipal level 20. Technical assistance in corporate governance and introduction to bankruptcy procedures 21. Rural financial institutions 22. Mitigation of floods effects and rehabilitation works performance in Osh and Jalal-Abad regions 23. Development of junior-age children at a community level [started in 2004] 24. Mitigation of natural calamities effects [started in 2004]
ADB/ OPEC	25. Provision and funding of social services 26. Development of the education sector
ADB/ JICB/ IDB	27. Bishkek – Osh motorway reconstruction [started in 2002]
IDB/ KFAED	28. Batken region electrification
IDB	29. Taraz – Talas – Suusamyr motorway reconstruction [started in 2003]
Germany	30. Private sector development credit line 31. Establishment of the Kyrgyz investment and credit bank 32. Maternity and childhood protection – reproductive health [started in 2003]
China	33. Paper mill construction
GRANTS	
World Bank	34. Central Asian biodiversity conservation transboundary project [GEF] 35. The Aral Sea basin water resources and environmental management [GEF] 36. Rural investments [started in 2004] 37. Prevention of natural calamities (Maili-Suu) [started in 2004]
Germany	38. TB prevention and treatment programme

Source: Report on Official External Aid to the Kyrgyz Republic for the Period 2002-2004, I 2005.

Table 11. Externally Financed Public Investment Programme Launched in 2005

Donor	Project Title	Credit Amount	Grant Amount
ADB	Development of the education sector 3	---	15 mln USD
WB	Rural education	---	15 mln USD
ADB	Modernization and development of customs service infrastructure	7.5 mln USD	---
ADB	Kyrgyz transportation corridor motorway project, Phase 1	32.8 mln USD	---
Germany	Funding of local government infrastructure	6 mln Euro	2 mln Euro
WB	Agribusiness and marketing	8.1 mln USD	4.75 mln USD
WB	Small towns infrastructure and capacity building	12 mln USD	3 mln USD

Source: Report on Official External Aid to the Kyrgyz Republic for the Period 2002-2004, I 2005.

Describing the PIP portfolio, it should be stressed that only few of the implemented projects could be classified as environmental (Table 10). These refer to water sanitation and flood protection projects (No. 7 and 8) and electric energy supply and rehabilitation of central heating systems (No.9). The two GEF grants also finance environmental investments. However, there are many projects implemented by governmental agencies which are not listed in the PIP programme (all omitted projects are financed through grants only). All other identified environmental projects are presented in Chapter 3 in the expenditure programme.

The project portfolio planned for 2004-2007 includes 25 new projects and consumes the limits of new debt growth. Thus, the room for manoeuvring is limited, but given the potential volume of DFES flows it should not be difficult for the Kyrgyz Government to find potential co-financing within the PIP.

Box 6: GEF – the Global Environment Facility

Established in 1991, GEF helps developing countries to fund projects and programmes that protect the global environment. GEF grants address six global environmental issues: biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

GEF funds are contributed by donor countries. Since 1991, the GEF has provided USD 4.5 billion in grants and generated $14.5 billion in co-financing from other partners for projects in developing countries and countries with economies in transition. GEF projects are managed by three implementing agencies: (1) the United Nations Environment Programme (UNDP), (2) the United Nations Development Programme (UNEP), and, (3) the World Bank.

In the Kyrgyz Republic, GEF financed 5 country projects and 7 regional and global projects. In 2002-2004, two GEF projects were included in the PIP: (i) Water and Environmental Management in the Aral Sea Basin; and (ii) Central Asia Transboundary Biodiversity Project.

Source: www.gefweb.org

3. EXPENDITURE PROGRAMME

Establishing a credible expenditure programme that responds to priority concerns of both creditors and the Kyrgyz government will be essential to gain support for a debt-for-environment swap. The proposed programme should be narrowly focused on a few priorities and demonstrate how a solid pipeline of projects could be prepared and supported to meet its objectives. This chapter reviews the Kyrgyz environmental priorities, looks into (global) creditors' preferences and aims to identify the most promising priority project pipelines to be discussed during negotiations with potential bilateral creditors.

Various types of projects have been screened against general eligibility criteria[21] identified in the Terms of Reference (ToR) of this project. The ToR require that successful project pipelines should achieve environmental benefits jointly with poverty reduction, and should facilitate local sustainable growth and job creation. In particular, the projects within each priority area should:

- facilitate achievement of water and environment-related Millennium Development Goals, the 2003 Johannesburg WSSD (World Summit for Sustainable Development) targets and the objectives of the WEHAB (**W**ater Supply and Sanitation, **E**nergy, **H**ealth and Environment, **A**griculture and **B**iodiversity) agenda;
- facilitate alleviation of poverty, and generate sustainable local incomes;
- provide regional or global environmental benefits, and facilitate the fulfilment of international environmental agreements by the Kyrgyz Republic;
- contribute to peace and security in Central Asia by alleviating regional and cross-border conflicts related to the management of shared and trans-boundary natural resources; and,
- be consistent and complementary to other foreign aid programmes and contribute to the implementation of commitments made by the Kyrgyz Government.

Based on the above criteria, three priority areas and five specific project pipelines were identified. The pipelines were analysed in terms of geographic location, main project types, typical project owners as well as project (financial) sizes. In addition, all current and expected project portfolios/pipelines financed by different sources have been reviewed and funding gaps analysed with the aim of identifying a niche where DFES resources could be most useful. The final choice of the project pipelines takes into account the forecast of likely revenues of the DFES scheme. Special attention is given to projects that can attract co-financing from other sources, including the private financial sector, IFIs and foreign grants. In the end, two pipelines are recommended for further analysis.

3.1 Existing Environmental Infrastructure and General Environmental Conditions

The Kyrgyz Republic has a well-developed legal system in the field of environmental protection. The environmental management system comprises two fundamental elements: a) co-ordination and supervision, and b) natural resources management. Environmental co-ordination and supervision is exercised by the Ministry of Ecology and Emergencies, in co-operation with seven *oblast*-based environmental

[21] These general eligibility criteria were agreed upon with the Kyrgyz Government at the outset of the project.

administrative units and environment protection inspectorates. Natural resources management has been entrusted to a number of state authorities; the Ministry of Agriculture is responsible for water resources; the State Forest Inspection Service, with responsibilities for natural resources protection as well, reports to the President of the Republic. The State Geology Committee's area of responsibility extends to the management of mineral resources.

The Kyrgyz Republic is a signatory to all environmental conventions related to its location and natural conditions, such as the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; the Vienna Convention for the Protection of the Ozone Layer; the Ramsar Convention on Wetlands; the UN Convention to Combat Desertification; the Convention on Biological Diversity; the UN Framework Convention on Climate Change.

3.1.1 Environmental Conditions and Targets

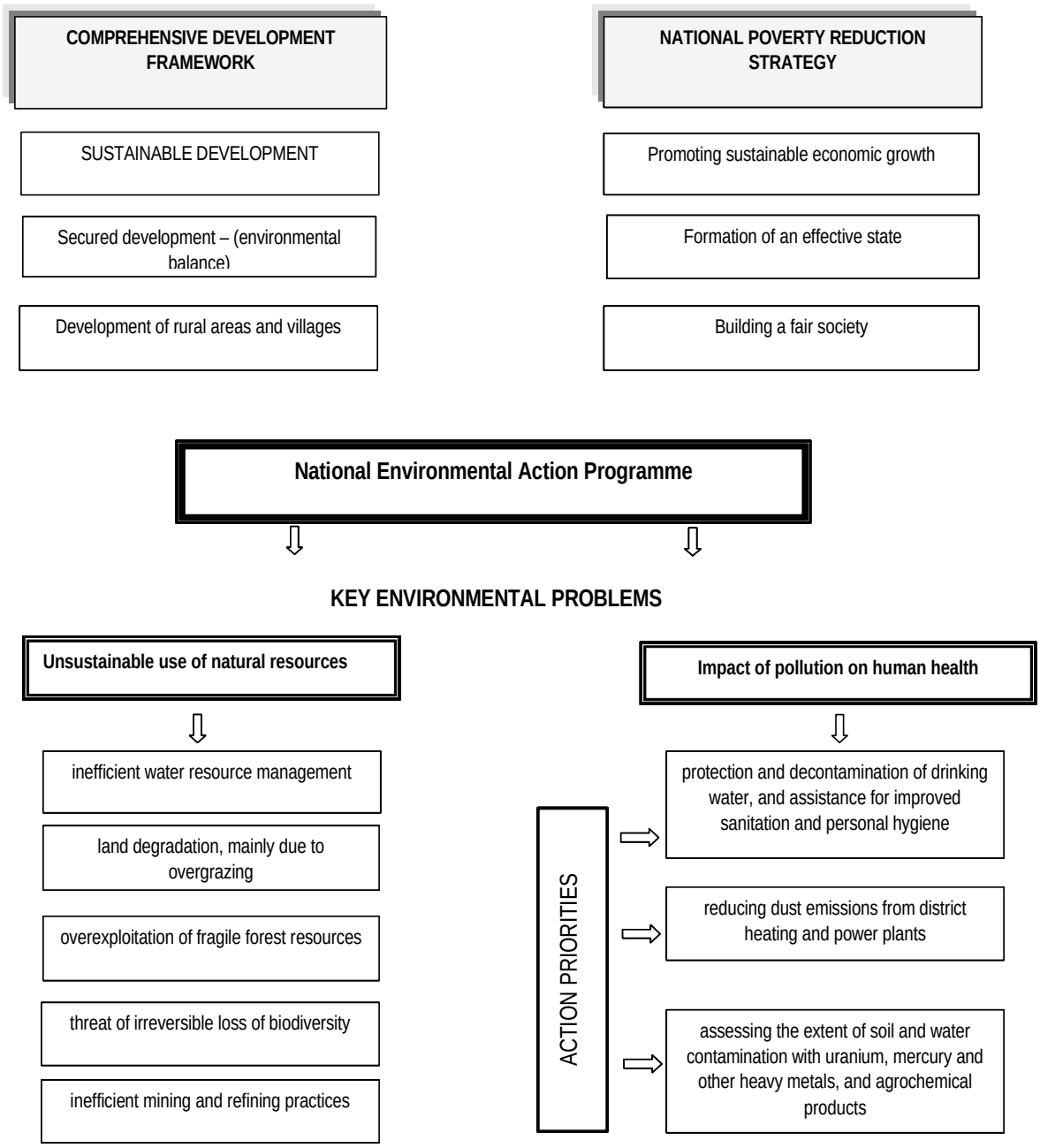
The strategic goals of the Kyrgyz Republic are defined in two fundamental documents: the *Comprehensive Development Framework* (CDF) and the *National Poverty Reduction Strategy* (NPRS). The implementation of these strategic goals is monitored by the World Bank and the International Monetary Fund. Each of the two strategic documents identifies three main objectives, with sustainable development as a common framework (Chart 9).

In addition, the *National Environmental Action Programme* (NEAP) prepared in co-operation with the World Bank (1995) identifies two main environmental problems: (i) unsustainable use of natural resources, and in particular of water resources, soil, forests, biodiversity, and mineral resources; and (ii) the impact of pollution on human health, with special attention to water pollution, air pollution (especially in large urban agglomerations), and mining-related hazardous waste with a considerable uranium, mercury, and heavy metal content. After 10 years of implementation, the NEAP seems to be out-of-date. As a result of the economic development and transformations, a lot of industrial enterprises have ceased their production. The current state of the environment has brought to light new threats that need immediate responses, such as, for example, land degradation.

Due to the shortage of budgetary resources, the *action priorities* identified in the NEAP have been limited to the elimination of pollution affecting human health.

The state of the environment of the Kyrgyz Republic is presented in the periodically published *National Report on the Conditions of the Kyrgyz Natural Environment*. The most recent 2001-2003 report was prepared by the Department of Ecology of the Ministry of Ecology and Emergencies and published in 2004.

Chart 9. Principal Strategic Goals of the Kyrgyz Republic



The analysis of all available data and information on the state-of-the-environment aims to identify current health hazards for the population and nature. Pollution levels are reviewed and compared with the environmental situation in selected OECD countries, for illustrative purposes. This course of the analysis allows to select priority sectors for the Kyrgyz Republic where the level of pollution is alarming, or the costs of inaction are potentially very high. What follows below is a short description of the main environmental problems in the country.

With regard to climate protection, the Chuyska *oblast* and Bishkek account for nearly 100% of greenhouse gas (GHG) emissions. The power sector accounts for 74% of these emissions. The total GHG emissions in

1990 (the base year) totalled 36 647 million Mg, and then dropped to 15 million Mg in 2000. Such considerable greenhouse gas emission abatement results directly from the deep economic recession in the country. For the same reasons, total air emissions decreased from 662 000 tonnes in 1989 to 239 000 in 1998 with a record low of 220 000 in 1997. Average emissions *per capita* were some 51 kg in 1998, all pollutants included. For comparison, average emissions (NO_x and SO_2 only) in OECD member states total 80 kg *per capita*.

Table 12. Air Emissions from Stationary Sources in the Kyrgyz Republic, 1991-2003, Thousand Tonnes

	1991	1992	1993	1994	1995	1996	1997	1998	2001	2002	2003
Total	161.3	128.6	94.1	64.8	55.0	47.4	37.5	41.2	35.2	32.2	35.7

Source: National Statistics Committee.

Records of air pollution caused by toxic gas above permissible levels exist for Bishkek only. The average allowable annual rates of concentration of nitrogen oxides (NO-0.06 mg/Nm^3, NO_2-0.04mg/Nm^3) are exceeded on 16-29% of days *per annum*, specifically in the city centre, whereas the average allowable annual SO_2 concentration rate (0.2mg/Nm^3) is exceeded only in the vicinity of the combined heat and power plant in Bishkek. Data for Bishkek show high average concentration rates of formaldehyde of 0.023 mg/Nm^3, which effectively means that allowable standards are exceeded 7.7 times. Notwithstanding the above, a comparison of average annual dust, NO_x and SO_2 concentration rates against data recorded, for example, by Lithuania and the United Kingdom shows that the Kyrgyz Republic frequently records concentration rates lower in order of magnitude.

Since 2000, the Kyrgyz Republic has been party to the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol which regulate the elimination of ozone depletion substances (ODS). The Kyrgyz Republic does not produce ODS whereas ODS imports in the year 2000 totalled 67.49 tonnes, nearly 80% of which is used in refrigerators, with the remaining part used in agriculture, mainly for milk cooling purposes.

Managing waste is among the most serious environmental problems in the Kyrgyz Republic. There are 30 radioactive waste landfills and 5 heavy metal content waste dumps, all inherited from the Soviet period. Waste dumps are not adequately protected, and all pose a real danger to the population in the country as well as to neighbouring states. This applies in particular to the Majluu-Suu dump (Jalal-Abad *oblast*), which – if disrupted by erosion or a seismic activity – may prove a real threat to the densely populated and fertile Fergana Valley divided between the Kyrgyz Republic and Uzbekistan.

Of the 15 087.65 thousand hectares of soil, 47% is prone to intense wind- and water-induced erosion. Agricultural land covers a total of 10 797.2 thousand hectares, 1 237.2 of which is allocated as arable land. Since 1960, the area of arable land has shrunk by 247.3 thousand hectares, with an additional 92.9 thousand hectares of arable meadows gone as well. The share of saline land taken out of agricultural production is increasing rapidly (1 180.8 thousand hectares in 2002).

The Kyrgyz Republic uses 12-17% of its water resources *per annum*, 95% of it in agriculture (sprinkling and irrigation), a further 3% for consumers' use, and 2% in industry. In 2002, 8 467.2 million m^3 of water was used, 342 million m^3 of which was from underground screens. Eighty three percent of the country's population have access to clean drinking water. The average water consumption rate *per capita* in the Kyrgyz Republic totals about 130 litres, 161 litres in cities, and 98 litres in rural areas. In Bishkek, on the other hand, the average water consumption rate *per capita* totals 227 litres.

A mere 28.4% of the population has access to a wastewater collection network combined with wastewater treatment. In 2001, 1 156 million m^3 of waste was discharged, of which only 134 million m^3 was treated according to official standards. In 2002, 2 270.4 million m^3 of municipal waste was discharged into rivers,

of which only 108 million m^3 was treated appropriately. The country has 20 wastewater treatment plants totalling 719 800 m^3/day in capacity. Their technical conditions raise understandable doubts on the part of the environmental protection authorities. In reality, only the first (mechanical) stage of wastewater treatment is anywhere near satisfactory. Major surface water pollution has been recorded in river waters in their course below Bishkek. In the Ala-Archa and Ak-Suu rivers, the content of organic substances, nitrates, copper compounds, and phenols exceeds the allowable standards by 2-3 times. The fact that allowable standards for phenol and copper compound content rates have been exceeded by more than double the permitted rate in the coastal waters of Lake Issyk-Kul in the vicinity of the city of Balykchy as well as in individual bays is a cause of serious concern.

3.2 Priorities for the Expenditure Programme

The above information on the state of the environment in the Kyrgyz Republic introduces some of the main problems which are discussed as part of the identification of priority sectors in the report. For the purposes of this analysis, various public domain sources have been reviewed and carefully studied. At this stage, two main criteria have been used for the sector analysis: the scale of the impact of an environmental problem on human health, and the possible size of financial resources that could be obtained through a DFES. As a result, four main environmental sectors have been scrutinised, namely:

- air;
- water resources;
- natural resources (soils, forests); and,
- waste management.

All data sources on atmospheric pollution in the Kyrgyz Republic show that total air loads per inhabitant are in general 40 % lower than in OECD countries. Also, the annual average concentrations of gases such as SO_2 and NOx are much lower than in European countries (in terms of order of magnitude). For the sake of comparison, in Bishkek (where the highest levels of air pollution are recorded) the average rate of SO_2 concentration is 0.008 mg/m^3 and of NOx is 0.04 mg/m^3, while in most European countries these rates are respectively between 0.02 – 0.03 mg/m^3 for SO_2 and 0.02 mg/m^3 for NOx. In the absence of large air polluters, the transboundary pollution affecting neighbouring countries is not really a problem.

In the light of the above, air protection is not considered as a priority sector to be financed within the framework of a potential DFES mechanism. Within this sector, only the problem of GHG emissions is analysed. The annual per capita emissions of greenhouse gases in the Kyrgyz Republic amount to 3 Mg/capita while in Germany it is 10 Mg/capita. In compliance with the Kyoto Protocol, ratified by the Kyrgyz Republic, the country is not legally obliged to make any GHG emissions reductions. However, the current critically low level of consumption of energy (0.74 toe/capita) (compared to European countries (4 toe/capita) coupled with further economic development points to the fact that energy consumption will only grow in the future. The use of renewable energy sources is one area where the Kyrgyz Government could focus its efforts. This particular area has been subjected to further analysis in identifying potential project pipelines to be co-financed from DFES resources.

The Kyrgyz Republic has huge water resources of excellent quality. Reports on the state of the environment note some elevated level of pollution of industrial origin only in the region of Bishkek. And this is due to the lack of technically suitable sewage systems. The clean Kyrgyz waters can be explained by the fact that only small quantities of sewage are disposed into rivers, only about 5 % of the entire river flows are estimated to be polluted. The main reason for this is that only 28% of the population has access to sewage systems (hence pollution remains scattered and generates long term risks). An additional element for eliminating this sector from the analysis is the large size of capital costs needed. Even a single project of modernisation and/or construction of sewers and a waste water treatment plant usually exceeds several million of USD. However, the special nature, social and economic position of the lake Issyk-Kul

and the considerable international aid that has been flowing to this region makes water investments in this area appropriate for a project pipeline under the DFES scheme.

Special attention is given to environmental problems related to devastation of the soils, desertification processes, the irreversible loss of natural resources (and especially forests) which pose a significant threat not so much to human health but to the health of the nation.

The problems of communal waste and radioactive waste in the Kyrgyz Republic are particularly serious. However, the level of resources needed to implement even one single project only often exceeds the potential amount of expected DFES revenue. In addition, for the implementation of a proper waste management policy, as seen from the experience of European countries, a necessary legal and financial framework needs to be in place and it is currently lacking in the Kyrgyz Republic.

Therefore, three priority areas have been identified for further analysis. These are:

- water resources (regional waters);
- biodiversity; and,
- climate change.

The analysis of the specific pipelines in each of the priority areas has gone through the following 4 major steps:

1. Familiarisation with the current and expected work of other partners in the Kyrgyz Republic – this first step involves the identification of current and expected projects of international agencies, government and NGOs in the three thematic areas.
2. Identification of assistance gaps in view of national strategy documents - this step consists of the analysis of existing portfolios and pipelines against priorities set by strategy documents in the priority areas of biodiversity, regional waters and climate change, and poverty reduction. The gap analysis results in the identification of "entry points", which are defined as national priorities that currently receive no or insufficient funding.
3. First identification of most promising pipeline opportunities - within the strategic entry points, the various types of projects are screened against the general eligibility requirements as defined in the ToR. This work forms the basis for the identification of at least 1 or 2 potential pipelines in each of the three priority areas. Suggested pipelines are analysed in terms of **(i)** geographical location of eligible projects; **(ii)** main types of projects, including size; **(iii)** typical project owners (e.g. municipalities; municipal enterprises); **(iv)** justification of DFES financing of the pipeline.
4. Selection of three most promising pipelines – in consultations with the OECD and the Kyrgyz authorities, the two most promising pipelines have been identified for further analysis.

In addition, justification of each of the pipelines is proposed and potential difficulties and challenges are outlined.

3.2.1 Area 1. Water Management: Identification of Promising Pipelines

The Kyrgyz Republic's water resources are of key importance to the economy of four neighbouring states: Kazakhstan, Uzbekistan, Tajikistan, and Turkmenistan. 44.46 km^3 of water flows out of the country per year. In the early eighties, the five countries signed a number of agreements on water distribution. In 1991, ministers responsible for water management confirmed the validity of the agreements signed in the 1980s. Today, the Kyrgyz authorities are not satisfied with the system of financial compensation for the maintenance and renovation of water reservoirs. Multilateral agreements are being replaced with bilateral agreements, such as, for example, the agreement signed with Kazakhstan (1998). A similar agreement – a trilateral one, was signed for the Syr Darya catchment basin water management purposes between the

Kyrgyz Republic, Kazakhstan, and Uzbekistan (1996). Compensation payments due to the Kyrgyz Republic are laid out in annual agreements.

Table 13. Main River Basins in the Kyrgyz Republic

River Basin	Main Tributaries on Kyrgyz Territory	Watershed Area (km^3)	Average Flow Rate (Billion m^3/year)
Chu	Chu	14 154	3.73
Talas	Talas	7 640	1.35
Assy		454	0.19
Syr Darya	Naryn, Kara-Darya	99 458	27.42
Amu Darya		7 700	1.25
Issyk-Kul Lake		15 738	3.33
Ili		997	0.36
Tarim		22 650	6.15
Total		**168 791**	**44.46**

Source: NEAP, 1995.

Kyrgyz rivers belong to the catchment basin of the Aral Sea (78.3%), Tarim (14.8%), Issyk-Kul (6.5%), and Lake Balhash (0.3%). Glaciers cover an area of 8 100 km^2, i.e. 2% of the country's territory. Three-quarters of glacial waters feed the catchment basins of Syr-Darya and Tarim. The largest Kyrgyz tributary is that of the River Narin system, including the River Kara-Darya, delivering water to the Syr-Darya. The catchment basin of Lake Issyk-Kul includes more than 80 small rivers. This huge lake located at an altitude of 1 608 m above the sea level, unique to Asia in its natural and physiographic features, has no outflow waterways; evaporation provides water balance. The catchment basin totals 15 738 km^2. The catchment basin of the River Chuy is yet another important one to two countries: the Kyrgyz Republic and Kazakhstan. The basin totals 38 400 km^2, with its major part located in Kazakhstan.

Current and Expected Work by Donors/Government and National Priorities

In conformity with the methodology outlined above, this section provides information on priorities and investment activities in the area of water management.

Table 14 presents the major current and planned projects by donors and the Kyrgyz Government in the area of water management as identified in the NEAP. Donors support these activities mainly through grants while the Kyrgyz Government contributes mostly through credits obtained from multilateral financing institutions, particularly from the World Bank (WB) and the Asian Development Bank (ADB).

Table 14. Current and Expected Work by Donors/Government and National Priorities in the Area of Water Management

National Priorities	Major Current & Planned Projects	Years	Funding Agency/Type of Fund	Implementation Agency	Budget (USD)
Protection and decontamination of drinking water, and assistance for improved sanitation and personal hygiene	Rural water and sanitation project	3/1/2002 8/1/2007	DFID UK - GRANT	Ministry of Agriculture & Water Management	5 743 044
	Rural water and sanitation project	3/1/2002 3/1/2006	DFID UK - GRANT	Ministry of Finance	5 445 990
	Water management system	1/1/2002 10/1/2005	Government of Swiss Confederation- GRANT	Ministry of Agriculture & Water Management	2 076 208
	Water Supply Authority	7/1/2003 7/1/2006	Government of Swiss Confederation- GRANT	Ministry of Agriculture & Water Management	1 483 000
	Water, sanitation and flood protection	14/12/2004 31/10/2007	World Bank - GRANT/LOAN	Ministry of Finance	15 000 000
	Rural water and sanitation project	04/12/2001 31/10/2007	World Bank - LOAN	Ministry of Finance	15 000 000
	Institutional strengthening and rehabilitation of water supply in 500 villages and 5-10 small cities; sanitation	2000-2006	ADB - LOAN/GRANT	Ministry of Agriculture, Dept. for Rural Water Supply	Grant – 9 000 000 Loan – 35 000 000
	Policy guidance and monitoring for the water sanitation sector (component of the World Bank programme)	1/03/2002 1/03/2007	DFID UK - GRANT	Ministry of Agriculture, Dept. for Rural Water Supply	7 480 000

Identification of Assistance Gaps and Potential DFES Pipelines

This section contains analysis of the financial coverage options for potential water protection projects as well as an assessment of the opportunities for identifying potential project pipelines.

On the basis of *eligibility requirements* adopted for priority areas related to water management in the Kyrgyz Republic, the 2001 *Regional Environmental Protection Action Plan for Central Asia* concludes that observed river pollution is local in nature, and is of no major importance to the overall cleanliness of trans-boundary waters. Water is considered a priority in the country's social and health care context. In this context, and in line with international objectives laid out in the Millennium Development Goals, *Water Supply and Sanitation* is recognised as a priority area. Undoubtedly, any investment completed in this

priority area directly affects the *alleviation of poverty*. The World Bank has assessed the country's financial requirements as totalling USD 180-200 million. Such an amount would have to be allocated over a short period of time to an overall project of modernising and constructing water supply networks, wastewater collection networks and wastewater treatment plants, should the majority of the population be provided with access to safe drinking water and sanitation facilities. For comparison, in 2003, domestic expenditure in the Kyrgyz Republic for water resources protection totalled 6.9 million soms (about USD 160 000), *current expenditures* excluded.

Completed foreign-funded projects, presented in Table 14, show that international aid has been focused on *Water Supply and Sanitation*, and on improving the water management system. The World Bank has declared that it will focus on supporting the water sector reform during the next few years, with particular attention paid to sustainable development, and to the financial balance of the sector, with a realistic user fee system to be introduced for water supply and wastewater collection and treatment.

In the largest catchment basin of Rivers Narin and Kara-Darya, all the big cities (Osh, Jalal-Abad, Narin, Kara-Kul, and Tash-Kumir) are major pollution hot spots. The volume of non-treated wastewater discharged totals nearly 1.6 million m^3 per year. These rivers deliver 18 km^3 of water to the Syr-Darya per year. Such a minor sewage volume results from the fact that the sewage networks in these cities are poorly developed (less than 20% of the population are covered). Just under 30% of the population are provided with water from the water pipe system. In the Osh and Jalal-Abad *oblasts*, a programme of rehabilitating and constructing water supply pipelines in several hundred villages over several consecutive years was launched in 2000. The Asian Development Bank provided a grant of USD 9 million and a loan of USD 35 million to support the programme. Moreover, water supply and wastewater collection were supported through grants totalling USD 7.5 million provided by the Swiss and British Governments to the Osh, Jalal-Abad, and Narin *oblasts*. All the above projects will have been implemented by the year 2007. The above regions are also home to two *Water Supply and Sanitation* projects, supported with World Bank loans totalling USD 30 million. These projects consist of three main components:

- rural water supply systems – rehabilitation and construction;
- small towns systems rehabilitation; and,
- institutional strengthening.

In this context, the Issyk-Kul lake has a special place. The first state nature reserve was established on the Issyk-Kul lake territory as early as 1948, now covering all of its vast area – an ample proof of the area's natural values. Top protection status was assigned to 19 086 hectares of water surface and coastal zones, inhabited by 24 species of protected mammals, 232 bird species, 12 fish species, and 297 floral species. A water-and-bogland area of specific value, this conservation area has been recognised as an International Preserve listed under the Ramsar Convention. Socially, Lake Issyk-Kul is a reservoir of special importance as well: it is a rest and leisure site for citizens of neighbouring countries, and thus forms part of the economic development perspectives for the Issyk-Kul *oblast*. In addition, a biosphere protection area was established for the entire Issyk-Kul *oblast* (4 314 400 hectares) in the year 2000.

Foreign donors have recognised the natural values of the Issyk-Kul region, as proven by the abundance of programmes targeted at this part of the country. Two of these, unique to the Kyrgyz Republic, form part of a comprehensive development and master plan for the area. The first programme is funded by the European Union (TACIS), with an amount of nearly USD 2 million (2003-2006). The second "Study on Integrated Development Plan of the Issyk-Kul Zone" is managed and implemented by the Japanese International Co-operation Agency (JICA), with a target completion date of March 2005. As part of the *Water Supply and Sanitation* priority, two UK DFID-funded projects (totalling nearly USD 13 million) are in progress in the Chuy, Talas, Narin and Issyk-Kul *oblasts*. Similarly, a *Water, Sanitation and Flood Protection World Bank* project (a loan of USD 15 million) is currently under implementation in the region.

Unfortunately, the *Water Management* priority area offers few opportunities for inclusion into a DFES programme. The only exception could be a pipeline of projects on rehabilitation and construction of wastewater treatment plants in the cities of Balykchy and Karakol (on the coast of Issyk-Kul) – and these are more suitable for inclusion in the *Biodiversity Protection* priority area (as will be discussed later). The analysis of making potential DFES funding part of projects included in the *Water Supply and Sanitation* priority area in the territory of the key catchment basins in the Kyrgyz Republic (Rivers Narin and Kara-Daria and Lake Issyk-Kul) proves beyond doubt that despite the considerable *financial gaps* (with only several major foreign funded projects), the scale of the needed investments exceeds the expected revenue from potential DFES several times over.

It would be possible to tailor DFES funding to reducing pollution of regional/international water bodies by focusing resources on the co-financing of smaller projects in decentralised wastewater treatment systems serving dispersed human settlements and rural areas. Such a model could be considered and analysed, especially in environmentally sensitive areas; such as Lake Issyk-Kul. Such an approach would benefit from managing wastewater as closely to the origin of its generation as practically feasible, and to the location of its potential beneficial reuse. Decentralised wastewater management allows the application of various cost-effective options, tailored to the prevailing conditions in the various sections of the community. Operational and maintenance costs of small-scale, decentralised wastewater treatment technologies in particular can be low, if the systems are designed to utilise gravitational flows and natural biological processes for filtration and decomposition of effluents (soil layers, plant roots, etc.). The wastewater management system may comprise several smaller sub-systems for collection, treatment and reuse. This theory is confirmed in practice by a well-functioning root-and-cane wastewater treatment plant with a capacity of 350 m^3/day located to the north of Karakol. This type of wastewater treatment plant costs several times less than "traditional" installations.

In conclusion, the option of financing Water Supply and Sanitation with support of rather limited DFES funds could be envisaged only in case of the **Improvement of Wastewater Collection and Treatment in the Coastal Villages and Cities of Issyk-Kul Lake.** Notwithstanding the above, it seems that this priority area does not carry sufficient capacity to conform to project pipeline requirements. The above priority, i.e. the conservation of habitats in Lake Issyk-Kul offers positive global spill-overs in terms of biodiversity conservation, but not in terms of reducing the pollution of regional/international waters.

Description of Project Pipeline 1. Improvement of Wastewater Collection and Treatment in the Coastal Villages and Cities of Issyk-Kul Lake

As mentioned earlier, the region of the catchment basins of the lake Issyk-Kul encompasses 15 738 km^2. Eighty rivers flow into the lake. Two hundred thousand people live along the banks of the lake. Moreover, during the tourist season an additional 250 000 people are estimated to visit the region each year. According to data of the Ministry of Ecology and Emergencies, about 16 millions m^3 of waste water is disposed of per year in the region, of which only 5.4 million m^3 is sufficiently treated. A JICA report on the Study on Integrated Plan of the Issyk-Kul Zone (2004) notes that the state of existing wastewater treatment plants in Cholpon-Ata, Karakol and Blykchy is alarming. The biogenic substances T-N (total Nitrogen) and T-P (total Phosphorous) have the most sizable impact on the water of Issyk-Kul. In 2002, T-N in the lake did not exceed the permissible standards and amounted, on average, to 0.15 mg/l. The content of T-N in rivers was respectively 1.03 mg/l. Similarly, the content of T-P in the lake and in in-flowing rivers was respectively 0.0011 mg/l and 0.012 mg/l. However, the concentrations of compounds of copper, zinc and the concentrations of phenols in some gulfs of the Northern part of the lake are alarming and need urgent measures. The JICA report foresees a rapid increase in the pollution levels of the lake due to a significant increase of tourist flows to the region. For example, JICA consultants note that the rehabilitation of the wastewater treatment plants in Cholpon-Ata, Karakol, and Balykchy is urgently needed.

Geographical Location:

Issyk-Kul Lakeside.

Main Projects Types:

Projects under this pipeline would finance: (i) repair work on wastewater treatment plants (WWTPs), (ii) upgrading of WWTP; (iii) establishment of decentralised wastewater systems tailored to the needs of targeted communities or units (e.g. hospitals, tourist centres; hotels; industrial facilities; etc), and (iv) use of plants and ecosystems management for cleaning up wastewater.

Project Size:

The project size would depend on the type of repairs needed, the upgrading proposed and overall characteristics of the decentralised wastewater systems. Current estimates suggest that the complete rehabilitation of non-operational wastewater management facilities in Karakol would cost a minimum of USD 4 million.

Typical Project Owners: Municipalities (5 000 to 100 000 inhabitants).

Justification for DFES Financing:

The pipeline shows direct benefits in terms of reducing pollution of Issyk-Kul waters and it also meets all National Poverty Reduction Programme (NPRS) priorities. Decreased pollution of lakeside waters will contribute to increased benefits for communities along the Issyk-Kul lakeside, and would include a more conducive environment for income generation in the tourism sector. This pipeline would reduce risks to public health due to the reduction of the faecal coli form population in drinking and bathing water sources. This would be an indirect, though important, contribution to the objectives of the NPRS. Finally, this pipeline has considerable potential for complementing the actions of other donors. There are a number of initiatives currently financed by donors and multilateral agencies in the Issyk-Kul *oblast*. These projects comprise both technical and investment components. The bulk of financial resources for investments is likely to come in the form of loans with requirements for national government co-financing while O&M costs will be covered by users.

Difficulties for DFES Financing:

A serious problem for initiating this project pipeline is the lack of sufficient financial resources. As discussed earlier, the expected revenue flow from a DFES would not be sufficient for substantial improvements of the municipal sewage dumped into the lake. The 16 million m^3 of waste water that flows into the lake annually is only slightly treated, if at all. It is estimated that the modernisation of the sewer systems and the existing waste water treatment plants requires about 15 million USD which, if implemented, would consume all potential DFES resources.

Suggested Pipeline

The analysis presented above indicates that the pipeline meets the criteria stated in the ToR for this study. Specifically, it was shown that the pipeline complies with priorities listed in national and international strategic action documents (such as the Comprehensive Development Framework (CDF), NPRS, NEAP). The pipeline provides regional environmental benefits, and could indirectly contribute to job creation in the waterside cities by contributing to a more conducive tourism environment. Finally, the project pipeline contributes to the NPRS by improving water and sanitary conditions. This contribution is of particular importance for the poorest segment of the population.

3.2.2 Area 2. Biodiversity: Identification of Promising Pipelines

The territory of the Kyrgyz Republic is particularly rich in biodiversity resources. Although the country's territory constitutes a mere 0.13% of the global terrestrial area, it is inhabited by 2% and 3% of all plant and animal species, respectively. Given the above data, it is obvious that the Kyrgyz Republic is a *global biodiversity hotspot* – an area of outstanding density of particularly endemic species. No doubt, the Kyrgyz Republic enjoys such environmental conditions thanks to its extraordinary physiographics: 40% of the

country's territory is located at an altitude exceeding 3 000 m above the sea level, with only 7% of the country's area *suitable for agricultural crops.* Intensive agriculture prevails in three valleys: Chuy, Fergana, and Issyk-Kul. Areas between valleys and tall rocky mountainous ranges are a hilly *semi-savannah and savannah* terrain, used for extensive grazing of farm animals.

Forests sit on 864.9 thousand hectares, i.e. 4.32% (2003) of the country's territory. The Kyrgyz forests are dominated by conifers (36.4%), primarily the Tien-Shan fir. The globally unique *walnut forests* cover an area of 116.2 thousand hectares, with particularly dense wood stand concentration at Arslanbob, the Jalal-Abad oblast. As a direct result of the shortage of easily accessible and relatively inexpensive energy sources, the forest area was reduced by more than one-half between 1930 and 1978 (Table 15), with illegal tree felling by the local population as a main factor. Expensive energy and fuel (coal, gas, electricity) sources in relation to the average household income make *kiziak* (dry animal waste) and wood the only two accessible types of heating and cooking fuel. An average rural area family needs 4-5 m^3/year of burning wood, whereas the accrual rate of total wood mass growth is just under 600 000 m^3/year (State Forestry Service data: 0.71 m^3/hectare/year). These data prove the scale of the threat to forests. Moreover, similarly to other Central Asian countries, 90% of the country's territory suffers from intense desertification. Wind and water erosion affect 6.5 million hectares of land. Should we add the rapidly expanding area of saline land (1 180.8 thousand hectares in 2002), we would have a very alarming picture. The 2001 *Regional Environmental Action Plan for Central Asia* report claims that losses due to regional desertification total USD 347 million per year.

Given the forests' climate and erosion-preventing functions; a single hectare of woodland has the capacity for retaining 22 000-36 000 litres of water. Erosion processes are four times weaker in afforested catchment basins (as proven in scientific research carried out in Poland's mountainous areas, for example). Given the circumstances – a major threat to future generations – the issue of more intense afforestation is crucial to the Kyrgyz Republic and its neighbours.

Table 15. Forest Area by Type

Forest Type	1930 Thousand ha	1978 Thousand ha	Change %
Total	1 396	624	-55
Coniferous	219	89	-59
Artcha	536	213	-60
Walnut	45	28	-38
Other deciduous	219	89	-59
Bush	377	205	-46

Source: KIRFOR, Bishkek, Kyrgyz Republic.

According to the World Conservation Union (IUCN) classification, the Kyrgyz Republic's biodiversity is divided into 4 categories:

- Nature reserves - top legal protection has been extended to 7 state nature reserves, totalling 270 713 thousand hectares;
- National parks – this group comprises 8 national parks – total area of 258.5 thousand hectares;
- Single objects or sites of high natural interest (60); and,
- Forest and botanical reserves (283 thousand hectares).

The total area of protected territories constitutes 4.2% of the country. This is considerably below the world average (6%), and highly unsatisfactory in light of the recommended national implementation of the natural values protection strategy, as seen by the Kyrgyz National Centre of Environmental Strategy and Policy.

At the end of 2004, the *State Forestry Service* prepared their *2005-2015 National Forestry Programme*. The forestry development concept adopted by the Kyrgyz Government in 2004 lists forest and biodiversity protection through nature conservation, planting trees and shrub species threatened with extinction, and development of alternative energy sources as the first three of ten strategic goals.

Current and Expected Work by Donors/Government and National Priorities

Current and expected work in this area carried out by donors and the Kyrgyz Government are presented in Table 16 below.

Table 16. Current and Expected Work by Donors/Government and National Priorities in the Biodiversity Area

National Priorities	Major Current & Planned Projects	Years	Funding Agency/Type of Fund	Implementation Agency	Budget (USD)
Biodiversity protection	Biodiversity protection of the Issyk-Kul region	1996 - 2005	GTC - GRANT	State Forestry Agency	2 030 000
	National Action for Biological Security	2003 - 2004	UNDP - GRANT	MoE	225 000
	Development plan of Issyk-Kul	2003-2006	JICA - GRANT	State Commission on Architecture and Construction, Bishkek	No data
	Environmental protection through enhanced capacity of civil sector to implement projects in the area of biodiversity, international water protection and climate change mitigation	2002-2004	UNDP SGP/GEF - GRANT	UNOPS New York - NGO's	500 000
	West Tien Sian Biodiversity Project – Phase 2	2004-2005	EU-TACIS - GRANT	Central Asia Ministries of Environment	1 300 000
Protection of forest resources	KIRFOR- Forestry Sector	2004-2007	SDC&SECO - GRANT	State Forestry Agency	5 000 000
	JUMP - Juniper forests Management plans (to develop sustainable management process and tools for a better conservation of forest resources for the benefit of the local population)	2004-2007	EU/TACIS - GRANT	State Forestry Agency	1 284 417
Land degradation	Mountain Pasture Management in Suusamyr Valley (expected)	2004 - ?	UNDP/GEF	Not decided	1 035 000
	Community based rangeland management in Temir Village (expected)	2004 - ?	UNDP – GRANT	Not decided	213 000

Identification of Assistance Gaps and Identification of Potential DFES Pipelines

Among the five crucial problems of the sector listed under *Unsustainable Use of Natural Resources* (Chart 9), the *National Environmental Action Programme* (NEAP) identified three issues directly related to biodiversity:

- land degradation, mainly due to overgrazing;
- overexploitation of fragile forest resources; and,
- threat of irreversible biodiversity loss.

Regrettably, none of the three key listed problems was identified in the NEAP as an *action priority*, primarily due to the lack of state budget resources.

Biodiversity protection projects, funded by IFIs and listed in Table 16, show that the international community recognises the *key environmental problems* identified in the NEAP as important and urgent. In financial terms, most of the assistance goes to forest resources protection. The *2001-2005 National Forestry Programme* adopted by the Government declares that "forest protection and expansion has become one of the top economic, financial, environmental, and social aspects of state policy". Sixteen thousand hectares of forest are to be planted throughout the 5 years of the programme duration with an amount of 379.37 million soms assigned for it (*current expenditure* excluded). This is a considerable amount of resources. Given the country's financial capacity and the fact that 1 million hectares of land managed by the Forest Fund are allocated for afforestation, the resources available are insufficient.

In April 2004, the Kyrgyz Government adopted yet another forest-related strategic document – the *Concept of Forestry Development in the Kyrgyz Republic until 2025*. Plans listed in the paper provide for a reform of the funding system for the *GosLesSluzhba* (State Forestry Service) by establishing a Forestry Development Fund. The Fund shall provide grants to private entities for programme-defined purposes, nature conservation included. The main source of revenue of the Fund will come from payments from the use of forests. Financial sources of the Fund will be allocated solely for the development of the forest sector.

The unique value of the country's nature has been reflected in a number of large projects funded by foreign donors (Table 16). These projects support one of the NEAP-listed priorities on preventing the *threat of irreversible biodiversity loss.* The problem of limiting biodiversity losses was emphasised during the World Summit on Sustainable Development (Johannesburg, 2002), and during the 2004 IUCN World Congress. Two large projects focusing on the Issyk–Kul protected area, and encompassing the entire *oblast* area deserve special attention. It seems that the ***Improving Wastewater Collection and Treatment in the Coastal Villages and Cities of Lake Issyk-Kul*** project pipeline discussed as part of the *Water Management* priority area may serve as an excellent supplement to activities aimed at the protection of this sensitive ecosystem.

Broadly understood, *land degradation*, one of the major environmental problems of the Kyrgyz Republic and encompassing wind and water erosion processes, landslides, and desertification, has also been noted by foreign donors as a problem extending beyond the country's internal issues. UNDP is currently designing two projects aimed at soil protection, and particularly the protection of grazing land from overexploitation.

As a result of the first screening of the entry points for DFES, two main potential areas of work have been identified. These are:

2. Protection against land degradation; and,

3. Prevention of irreversible biodiversity loss.

Description of Project Pipeline 2: Protection against Land Degradation

This priority involves the implementation of projects targeting the planting of strips or stands of fast-growing trees, such as poplars and willows with the purpose of preventing landslides, water and wind erosion, increasing the soil moisture content, and establishing ecological corridors binding currently fragmented protected areas. Within the time-span of several years, such plant stand development may prove helpful in preventing anthropopressure in domestic forests. Within developed coastal strips of lakes and rivers, strips of trees and shrubs are effective biogeochemical barriers preventing surface pollution flows from agricultural land and from locations with no access to wastewater networks.

Geographical Location:

Whenever selecting the location of afforestation strips or zones it ought to be borne in mind that the function determines the location. For example, lake protection against surface pollution flow requires afforestation strips to be located horizontally across the land swell, between the bank and the village itself. A priority activity – following the analysis of land resources managed by the State Forestry Fund – ought to include zone demarcation in the vicinity of protected areas, water reservoirs, rivers, drinking water intakes, and human settlements.

Main Project Types:

In co-operation with the State Forest Service (SFS), tree and shrub planting projects could be organised in numerous locations across the country.

Project Size:

According to SFS data, the cost of planting one hectare of land in the Kyrgyz Republic totals USD 150-300. Therefore, it may be assumed that an average-sized project should cost USD 5 000.

Typical Project Owners:

Private individuals, co-operatives and NGOs. In some cases, small communities could be represented by their municipal authorities.

Justification for DFES Financing:

Given the major degradation of plant life and progressive desertification processes in the Kyrgyz Republic and neighbouring countries, the pipeline project, as suggested, will be of benefit for biodiversity as well as surface water protection. The pipeline will be hugely beneficial to a number of priority areas, such as forestry as well as protection and productivity growth of agricultural areas. A further benefit of major importance of the pipeline is its social aspect. The very simplicity of projects as well as the relatively small amounts of financial resources required enables the rural population to participate in project implementation. Thus, projects implemented as part of the pipeline will generate additional income. Moreover, project implementation provides an excellent opportunity for environmental awareness-raising.

Difficulties for DFES Financing:

Such projects usually face two types of problems. First, numerous projects will be implemented by individuals, small local communities, and non-governmental organisations. Such fragmentation is both an opportunity for business development, and a threat to the objective itself. Such projects are usually very difficult to service financially, and to assess in terms of actual performance measures. Administrative costs and technical assistance activities usually get little support by donors. Another problem could be the securing of local resources needed to extend proper care to plantation areas.

Description of Project Pipeline 3: Prevention of Irreversible Biodiversity Loss through Afforestation and Related Activities

The fundamental premises supporting the selection of this particular project pipeline include the following: protection and expansion of forest areas, preventing the overexploitation of fragile forest resources, biodiversity protection, prevention of water and wind erosion processes, landslide prevention, improving water retention, and improvement of microclimate conditions.

Geographical Location:

The entire Kyrgyz territory, starting with the surrounding protection zones of state preserves and national parks.

Main Project Types:

Preparation of considerable amounts of micorised planting material for local tree species, including nursery areas allowing for acclimatisation. Preparation of areas for planting; planting and tree care. A radical increase in forest area growth will require an increase in the plantation rate from the current 3 000 hectares annually to a minimum of 10 000 hectares. A single plantation area should not be smaller than several hundred hectares. This will require a minimum pipeline allocation of USD 1 500 000 per year. The amount is realistic, given the potentially available DFES funds. During the initial years, it would be necessary to establish 3-5 nurseries and at least one micorising station in the vicinity of the plantation areas planned.

Project Size:

GEF experience with such projects proves that under Kyrgyz circumstances the cost of a single typical plantation project should not exceed USD 150 000. Higher costs – though not higher than USD 500 000 – may well be expected in case of establishing a system of nurseries and micorisation stations.

Typical Project Owners:

State Forest Service (*GosLesSluzhba*) and their independent local units.

Justification for DFES Financing:

This pipeline is justified primarily by its global benefits and national priorities as stated in the NEAP. The pipeline is crucial to poverty reduction, since thousands of jobs will be created every year. Polish experience shows that in areas of high unemployment, one of the main opportunities for alleviating its social consequences is creating jobs to support State Forests. Hundreds of small private businesses have been set up, providing simple services in forests. It has been estimated that the work output required to care for and plant 1 hectare of forest land translates into 3 500 man-hours per year. This is equivalent to employing 2 full-time staff. In addition, the project pipeline is of particular importance to the global objective of climate protection through more intense GHG capture.

Difficulties for DFES Financing:

Thanks to the Kyrgyz-Swiss Forestry Sector Support Programme (KIRFOR) and JUMP projects, the State Forestry Service is well prepared from a management point of view to increase the project scale considerably. Moreover, there are no crucial counter-indications on behalf of potential donors.

Suggested Pipeline

Two project pipelines have been identified as part of the *Biodiversity Protection* priority area:

2. Protection against land degradation; and,

3. Prevention of irreversible biodiversity loss through afforestation.

Pipeline 2 seems to be of lesser importance to the international community, although a major Kyrgyz problem is simultaneously addressed. In addition, the servicing of a multitude of small projects and

ensuring credible monitoring may create major problems. Notwithstanding the above, project implementation as part of the pipeline may constitute a crucial factor in reducing poverty by creating numerous jobs, especially in small locations. Local community participation in projects such as prevention of erosion processes or eliminating threats (landslides) by planting tree and shrub strips may form a crucial environmental education component.

Pipeline 3 is decidedly more effective in meeting the criteria identified by the ToR, especially with regard to the regional and global environmental effects aspect. The Kyrgyz territory, located centrally in relation to the other Central Asian states (and 90% mountainous), is of key importance to water supplies and climate conditions, and rain precipitation in particular. A radical increase in afforested areas may serve to prevent desertification processes, also in neighbouring countries.

In conclusion, we recommend pipeline 3 to be included as a priority, whereas pipeline 2 ought to be considered in debate and consultation with the Kyrgyz environmental authorities.

3.2.3 Area 3. Climate Change: Identification of Promising Pipelines

An economy in transition, the Kyrgyz Republic is part of the Annex Two to the Kyoto Protocol on Climate Change, and is thus not legally obliged to reduce its GHG emissions. Authors of the First National Report on Obligations of the Kyrgyz Republic Stemming from the Climate Change Convention, published in 2003, consider GHG abatement possible at a level of 19 million Mg CO_2 as opposed to the forecasted 29 million tonnes by 2020. The report points out that such an ambitious target will require 4 fundamental objectives to be fulfilled:

- Improving energy efficiency;
- Increasing the share of gas in the overall fuel use structure;
- Increasing the share of renewable energy sources in the energy account; and,
- Establishing a consistent power policy.

GHG emissions of Kyrgyzstan in 1990 (the base year, as set in the Kyoto Protocol) amounted to 8.28 tonnes *per capita*; in comparison: 10 tonnes *per capita* in West Germany, and 7.7 tonnes *per capita* in Poland. By way of comparison, energy consumption in the early 1990s in Kyrgyzstan totalled 1.5 toe *per capita*, as against 2.2 toe *per capita* in Poland, and 4 toe *per capita* in West Germany. Most (79.4%) of GHG emissions in the Kyrgyz Republic were generated by the power sector. The economic transition period caused industrial production to plummet, followed by a drop in power consumption (down to 0.74 toe *per capita*). GHG emissions in 2000 dropped by 58% as compared to the base year. The power sector continues to hold a 74% share in GHG emissions. Unfavourable changes have been recorded in the fuel consumption structure, as coal use volumes grow, and more expensive carbohydrate fuels are neglected. Power and heating plants are top energy consumers (20.7%). The country's economy carries the burden of disproportionately high costs generated by two factors: the very high energy consumption rate, and energy losses. The so-called power "losses" trigger particular anxiety on the part of the Kyrgyz authorities. In 2001, they were 4.1 times higher (as per contractual fuel rates) than in 1999. This "loss" volume carries just 23 million m^3 of natural gas. Electricity "losses" totalled 4.802 million kWh in 2001 (35.2%). "Losses" have resulted from failures to pay for energy use, an inefficient enforcement system, and – to a lesser extent – an illegal power use.

All strategic documents developed by the Government as well as a number of papers commissioned by international institutions indicate the very difficult and tense power balance, unfavourable price levels for imported carbohydrate fuels, and huge financial losses incurred by the power sector preventing any restoration work within the sector. In 2001, the import of fuels and energy in the energy balance of the Kyrgyz Republic accounted for 40.4 %.

Concurrently, relevant policy documents lack unambiguous priorities in terms of environmental protection, such as power savings and direct introduction of renewable energy sources. The NEAP *action priorities*

provide only for reduction of dust emissions from heating installations. Regrettably, the Kyrgyz Republic has no strategy of developing renewable energy sources despite its tremendous potential in this field. The experience of a number of European Union member states proves that energy saving and the courageous introduction of renewable energy sources constitute the most efficient tool in the radical reduction of air pollution, climate protection, and improvement of economic efficiency.

Renewable Energy Sources

While renewable energy resources, as estimated by World Bank experts, could well cover 50.7% of the Kyrgyz demand, their share in the overall energy account is symbolic, totalling 0.15%. **Hydro-power plants** with their overall design capacity of 3 000 MW dominate the area of electricity generation. The Kyrgyz Republic has 5 large and 13 small hydro-power plants; their technical conditions require rapid modernisation, however. Although these facilities use a mere 11-15% of the Kyrgyz rivers' power potential, the construction of 60 small hydro-power plants with a total design capacity of 300 MW, as suggested by the World Bank ESMAP (Energy Sector Management Assistance Programme)[22] report, would cost USD 150 million, with another USD 150 million required to modernise the existing plants.

By 2002, 60 000 m^2 of heat-generating **solar panels** were installed in the country. The Kyrgyz Republic has about 2 600 hours/year of sunshine, translatable into 1 500-1 900 kWh/m^2/year. The country also claims two important industrial plants with a manufacturing capacity sufficient to cover approximately 30% of the former Soviet Union demand for crystalline silicon used in solid state devices in space and defence industries. The Orlovka plant produces single-crystal silicon, while the Tash-Kumyr plant (construction in progress) was designed to manufacture polycrystalline silicon. The Tash-Kumyr plant is currently producing silicon blocks for a foreign customer on a toll basis. According to data provided by the *Centre for Renewable Energy of the Kyrgyz Republic*, the cost of constructing 1 m^2 of a solar installation amounts to approximately USD 200. For example, a 134 m^2 solar installation was set up at Bishkek's First Primary School, with a total cost of 1 million soms. The Municipal Environmental Protection Fund supported the investment. The installation has been operating flawlessly for the past two years, generating hot sanitary water.

Different **biomass** types also carry a major and yet unutilised energy potential. Table 17 shows the theoretical energy potential of various biomass types.

Straw carries the greatest energy potential. The Kyrgyz Republic grows cereals on areas covering 648 000 hectares. Therefore, the annual straw crops may be about 1.8 million tonnes, which would yield approximately 25 000 TJ of energy. Straw could be used in small household boilers in rural areas. Two and a half million m^3 of animal waste generated per year are yet another type of potential power-generating biomass. When fermented, animal waste may generate biogas, as well as high-quality soil fertilising compost. Today, the Kyrgyz Republic has 15 biogas reactors of a capacity ranging from 5 to 250 m^3. As per the *National Programme on Biogas Production and Natural Fertilisers (*draft completed by the *Centre for Renewable Energy of the Kyrgyz Republic)*, it will be possible to construct 4 000-5 000 biogas reactors in the Kyrgyz Republic over the next 10 years, with a total cost estimated at USD 35 million. Biogas generated from the use of animal waste could cover 50% of the power demand of rural area households. Compost produced in reactors could increase the fertility of agricultural land by 30%.

[22] The Energy Sector Management Assistance Programme (ESMAP) is a World Bank managed, global technical assistance programme which helps build consensus and provides policy advice on sustainable energy development to governments of developing countries and economies in transition. ESMAP also contributes to the transfer of technology and knowledge in energy sector management and the delivery of modern energy services to the poor. ESMAP was established in 1983 under the joint sponsorship of the World Bank and UNDP as a partnership in response to global energy crises. ESMAP's mandate has evolved over time to meet the changing needs of its clients.

Table 17. Calculated Energy Potential of Biomass

Source	Estimate of Energy Potential			
	Technical		Theoretical Economic Potential [as a Share of Technical Potential]	Economic
	m^3 x 1000	TJ	%	TJ
Wood fuel	120	576	30	173
Wood waste industry	30	144	10	14
Other wood waste	20	96	10	9
Dry agriculture waste (straw)	5 400	25 200	15	3 780
Municipal waste	400	800	10	80
Biogas	200 000	4 187	15	628
Sewage, effluents	450	650	30	195
			Total	**4 879**

Source: Data compiled from different sources and calculated by the authors.

The World Bank's ESMAP Mission has estimated the potential of other renewable energy sources in the Kyrgyz Republic, such as **wind and geothermal sources.** They have found that these sources are of much lower value and importance in the Kyrgyz energy picture. **Wind data** indicate rather modest resources that could be commercially promising; however, the country's terrain is such that localised regimes of commercially interesting resources may well exist. **Geothermal sources** are also modest but could be viable for applications such as dairies, health spas, wool-washing, and other applications located near the source.

The above World Bank report notes that the main motivations for the Kyrgyz Republic to develop its renewable energy resources are to:

- capitalise on available, financially attractive renewable energy resources in the country;
- reduce the country's dependence on imported fossil fuels by using renewable energy in heating applications;
- provide electricity to rural areas and nomadic populations not connected to the electricity grid at a lower cost than a grid extension.

With the aim of developing and promoting renewable energy sources, in 1993, the *KUN* ("sun" in Kyrgyz) organisation was established through a Presidential Decree. More recently, *KUN* changed their institutional status – now they have become the *Centre for Renewable Energy of the Kyrgyz Republic*. Due to financial difficulties, however, their potential for effective work is very limited.

Current and Expected Work by Donors/Government and National Priorities

This section contains information on current and expected work by donors and international organisations and IFIs with contributions by the Kyrgyz Government within the climate change area. Two priorities have been identified: developing renewable energy sources and improving energy efficiency.

Table 18. Current and Expected Work by Donors/Government and National Priorities in the Area of Climate Change

National Priorities	Major Current and Planned Projects	Years	Funding Agency / Type of Fund	Implementation Agency	Budget (USD)
Renewable Energy Sources	Renewable energy driven pumps system in rural areas in Issyk-Kul and Narin	2003 – 2004	Nordic Trust Fund/UNDP/GRANT	?	220 000
	Renewable energy driven pumps system in rural areas in Issyk-Kul and Narin	2001 – 2004	GEF/GRANT	?	444 000
	Renewable energy driven pumps system in rural areas in Issyk-Kul and Narin	2001 – 2004	UNDP/GRANT	Ministry of Ecology and Emergencies	434 000
	Renewable energy driven pumps system in rural areas in Issyk-Kul and Narin	2003 – 2004	UNDP/GRANT	Issyk-Kul Region	210 000
	Renewable energy driven pumps system in rural areas in Issyk-Kul and Narin	2001 – 2004	UNDP/GRANT	Ministry of Ecology and Emergencies	429 000
	CAMP: A more sustainable use of renewable energy sources in Central Asia	2001 – 2006	SDC&SECO/GRANT	Centre for Development and Environment of the University of Bern	3 700 000
	Biogas (not yet launched)	2004	GEF/GRANT	Not decided	15 000
Energy Efficiency	Power and district heating rehabilitation project	1997 – 2005	World Bank/ LOAN	Ministry of Finance	20 000 000
	Modernisation of the power station and district heating system in Bishkek	1996 – 2000	Swiss Government/GRANT	OAO "Electro Station"	4 972 057
	Energy efficiency (not yet launched)	2004?	DFID UK/GRANT	Not decided	1 525 000

Identification of Assistance Gaps and of Potential DFES Pipelines

The projects shown in Table 18 are primarily funded from grants offered by organisations, international institutions, and governments, thus proving that the interest in reducing greenhouse gas emissions is considerable, although under the Kyoto Protocol, the Kyrgyz Republic is not obliged to reduce such emissions. The analysis of the projects in the two priority areas (*Renewable Energy Sources (RES)* and

Energy Efficiency) shows that foreign donors allocated an amount of USD 5.452 million exclusively in grants for the implementation of 7 projects related to *Renewable Energy Source* over the period 2001-2006. In the *Energy Efficiency* area, funds are massive (USD 26.497 million), most of them coming from a World Bank loan.

Despite the numerous financial and organisational problems in the energy market, and the lack of any strategy or tools to promote renewable energy sources, interest shown by donors is considerable. This becomes obvious from discussions held with representatives of the UNDP, the World Bank, the USAID, and the Swiss Economic Cooperation Office (SECO). It seems that the development of renewable energy sources – in rural areas with difficult access to the power grid in particular – provides an opportunity for obtaining financial assistance from donors.

The large-scale use of renewable energy sources in the Kyrgyz Republic may have a major impact on the efficient implementation of a strategy to develop the country by decreasing its dependence on fuel imports, and setting up a poverty fighting programme by establishing local power generation systems. Renewable energy sources are the most efficient tool of air protection and reducing GHG emissions. It is recommended that during Stage One of implementing *RES* projects the focus should be placed on simple technologies using easily accessible resources. A programme of small biogas facilities using animal waste is a good example of such technologies. A very successful World Bank-supported programme in this field is currently being implemented in Georgia.

Following our pre-feasibility assessment, and in light of recommendations contained in other reports, and the World Bank ESMAP Mission's report in particular, two project pipelines for DFES co-financing are recommended, both corresponding to the *renewable energy sources* priority area, namely:

4. Biogas production from animal waste; and,

5. Rehabilitation of existing and construction of new mini hydro-power plants.

Description of Project Pipeline 4: Biogas Production from Animal Waste

In 2004, the Kyrgyz Republic operated 15 biogas installations, with bioreactor capacity of 5-250 m^3. The relatively high fossil fuels prices are an incentive to seek alternative and easily accessible energy sources. There is no doubt that biogas production is of great interest and importance for the farming community in the Kyrgyz Republic. Information on this issue has been collected through a questionnaire filled in by government officials, *oblast* officials from the Issyk-Kul *oblast*; direct discussions with farmers owning a dozen to several dozen head of cattle. All have been unanimous in their interest in producing biogas for cooking and heating purposes. Notwithstanding the above, many pointed out problems with generating sufficient financial resources to complete the investment. A preliminary report by Japanese (JICA) experts claims that Kyrgyz rural areas carry tremendous potential for introducing biogas technologies.

The World Bank's biogas installation construction pilot programme in Georgia has proven to be hugely successful. Over the next years, several hundred small bioreactors will be built to provide energy to households – in some cases, individual families. An informal meeting with World Bank experts has confirmed the major opportunity of supporting a similar programme in the Kyrgyz Republic.

Geographical Location:

Entire Kyrgyz territory. For the pilot stage, villages located in the vicinity of woodlands are recommended as an area to start building bioreactors.

Main Project Types, Size Included:

Projects will mostly work on a household or household group scale. Biogas units would require waste from a minimum pool of 10 or more head of cattle. To this end, several families can group together to obtain the needed cattle-breeding waste to operate the installation. In addition, animal bones could also be used as

raw material for biogas installations. According to analysis made by the *Centre for Renewable Energy of the Kyrgyz Republic*, the cost of pilot biogas units vary by type, ranging from USD 420 to 3,200 per unit. Our calculations (Annex 9) show an investment cost indicator of USD 200/m^3/day. In other words, to reach a production of 50 m^3/day of biogas, an investment of USD 10 000 will be needed.

Typical Project Owners:

Private individuals.

Justification for DFES Financing:

The project pipeline will ensure a plethora of benefits; first, it may serve to ease the problem with the lack of access to energy for poor people living in rural areas; second, illegal tree felling could be reduced; and, finally, methane air emissions from manure will be reduced due to the anaerobic digesting. In addition, another positive effect of generating biogas from manure is the production of top-quality compost to fertilise fields and grazing meadows, and the replacement of heating losses endured today when burning *kiziak* in household stoves.

The analysis of the Georgian biogas generation programme, the interest of international institutions (World Bank, OECD), and of potential commitments to support a similar programme in the Kyrgyz Republic indicate that such a project pipeline could enjoy support from other institutions, in addition to potential DFES financing. Local energy sources lower the dependence on imported fuels and as such also contribute to peace and security in the region. In fact, this pipeline actually meets all five *eligibility criteria* (as identified in the ToR).

Difficulties for DFES Financing:

The main challenge in implementing this pipeline is the lack of sufficient financial resources. Experience shows that in different areas of the country, seeing the benefits of such installations, farmers themselves have built biogas plants from scrap materials. Although such installations produce biogas in quantities which satisfy the needs of their users, these installations are extremely dangerous to operate because of the risks of explosion. Building professional pilot installations however could serve as an excellent awareness-raising tool and could help increase the safety of the operations of such equipment.

Description of Project Pipeline 5: Rehabilitation of Existing and Construction of New Mini Hydro-Power Plants

When considering pipeline 5, the main source of information and data used in this analysis has been the World Bank ESMAP Mission's paper containing very good technical and economic data on small hydro-power stations, in particular. The Kyrgyz Republic's economically exploitable hydro-power has been estimated at 48 TWh/year. The current production amounts to 11 TWh. In the years 1950-1960, under the centrally planned economy, a vast number of mini hydro-power plants with capacity below 10 MW were abandoned, as they were deemed economically inefficient. During that period, the Soviet Union focused on building massive hydro-technical facilities; today everyone is aware how much more hazardous they are to the environment.

World Bank experts have identified 19 facilities with a reconstruction potential. Most facilities may be opened for operation quite rapidly, with the average cost of modernisation totalling USD 0.3-0.8 million per MW of design capacity. For comparison, the ESMAP mission identifies 4 new priority investments, with the investment cost ranging between USD 1.0-2.2 million/MW. Experts point out that many new and modernised projects are extremely attractive for potential investors, because of (i) easy access to the construction sites and cheap connections to existing transmission lines; and, (ii) favourable economic efficiency of the project (payback period < 13 years).

The sample *Karakol* priority project (east of Lake Issyk-Kul) would concern a small hydro-power plant of 4.5 MW of design capacity, with an investment cost of USD 6.7 million, and a payback period of 13 years.

The report emphasises the tourist values of the Issyk-Kul region and its potential for a dynamic economic growth coupled with an undeveloped industrial grid. The closest power source is located 500 km down River Narin. In addition, during a visit to the Issyk-Kul region, local residents mentioned that power supply cuts are frequent and unexpected, they cause major turbulence to agricultural farms, and seriously increase the costs of operating agricultural processing enterprises, as extra diesel-fuelled generators have to be used and maintained.

This pipeline would finance projects targeting the repair or construction of hydropower plants in the range of 500-1500 KW.

Geographical Location:

Entire Kyrgyz territory.

Main Project Types:

Projects ought to focus on the reconstruction of abandoned small hydro-power plants, and the construction of mini-hydropower plants, in particular close to villages and settlements, and to agricultural processing enterprises. This is very important, as small hydro-power plants thus located may feed isolated power circuits, facilitating community identification with the power plant as a facility owned locally, and making the collection process of energy fees much easier.

Project Size:

The project size will be determined individually, on a case-by-case basis. For modernised facilities, the average hydro-power plant design capacity totals 0.8-2.5 MW. Given the investment costs of USD 0.3-0.8 million per MW, this means that an average project would cost USD 0.5-2.0 million. In the case of new projects (ESMAP priority list), one needs to consider projects with a cost ranging from USD 6 to USD 14 million. Obviously, investment costs depend largely on access to the construction site, distance from roads and transmission lines. By proper adjustment of the DFES financial mechanism, the investment size could be easily limited to e.g. 1,000 kW of power, i.e. the capacity required for a major village of 150-200 houses.

Typical Project Owners:

Local private companies, local owners, municipalities, community organisations and NGOs.

Justification for DFES Financing:

The pipeline shows direct benefits with regard to those identified in the Comprehensive Development Framework. Such a pipeline meets its three fundamental priorities: sustainable development, development of rural areas and villages and secured development. The increase of energy production utilising the huge energy potential of the Kyrgyz rivers is the cheapest way of reducing the energy deficit on the domestic market. In addition, the increase of retention of water in the Kyrgyz territory is a key challenge to water supply of the remaining countries of Central Asia. It needs to be pointed out that not only do micro- and mini-hydro power plants ensure clean energy, but water retention as well – a problem of great importance to the entire Central Asian region, as the Kyrgyz Republic is a source area for 4 neighbouring regions, as discussed earlier. Issues of water distribution and of feeding water to rivers flowing out of the Kyrgyz territory have been a source of major problems in regional relations. Increasing water retention will definitely contribute to alleviating trans-boundary problems in the region. Therefore, this project pipeline has an unquestionable regional significance.

It is difficult to imagine the effective implementation of the National Poverty Reduction Programme (NPRS) priorities without ensuring undisturbed energy supplies. In the coming 10-15 years, the implementation of NPRS priorities will not be possible without a considerable increase in energy production. This pipeline also corresponds to the objectives set by the Millennium Development Goals and especially the WEHAB (Water Supply and Sanitation, Energy, Health and Environment, Agriculture and

Biodiversity) agenda. Finally, this pipeline has considerable potential to be complemented by the actions of other donors. The World Bank ESMAP report indicates that there is a great chance that the Bank will provide concessional loans to this sector in the future.

Difficulties for DFES Financing:

A serious problem for initiating this project pipeline is the lack of financial resources. As discussed earlier, the resources that could be raised though a potential DFES mechanism alone for the modernisation and/or reconstruction of abandoned micro-hydro power stations would be far from sufficient. During the ESMAP mission, 19 small hydroelectric projects of 120 MW total installed capacity and 530 GWh of mean annual production were reviewed with an investment cost of USD 146.1 million. Project owners would need to make an investment in the order of several million USD, and only then would it be possible to look for other sources of finance to complement the DFES contribution.

Suggested Pipeline

Two project pipelines have been identified as part of the *Climate Change* priority area:

4. Biogas production from animal waste; and,

5. Rehabilitation of existing and construction of new mini hydro-power plants.

It seems that project pipeline 5 meets eligibility requirements better than project pipeline 4, that is to say that successful project pipeline implementation depends primarily on financial assistance options, with DFES resources targeted at individual investments. It may well be assumed that project pipeline 4 (biogas), consisting of low capital investments mostly affordable also to individual households or groups of citizens, will manage to raise resources, even if from private sources only. Micro- or mini-hydro power plants, on the other hand, are definitely investments requiring more technical and financial input, and thus accessible to a narrower investor community.

3.3 Recommendation on the Most Promising Pipelines for Further Analysis

The main purpose of this chapter was to review the Kyrgyz national environmental priorities and potential preferences of the international community and suggest the 5 most promising project pipelines for inclusion for financing under a potential DFES mechanism. The analysis of the pipelines has been made in terms of (i) geographical location of eligible projects; (ii) main project types, including size, and financing needs; (iii) typical project owners; (iv) major risk factors; (v) justification of financing of recommended project portfolios through DFES, (v) environmental, social, economic benefits - local and the trans-boundary; (vi) contribution to poverty reduction efforts in the country. The analysis aims to identify projects which could achieve environmental benefits together with poverty reduction, local economic development and sustainable economic growth.

During the analysis, the pipeline opportunities have been screened against 14 criteria (9 major criteria and 5 sub-criteria) as identified in the project's Terms of Reference. The results of this screening are shown in Table 19 below. Each of the project pipelines has been assessed in terms of meeting a criterion, not meeting it or as "uncertain" where the project pipeline impact is not straightforward. As can be seen from the Table, ***Project pipeline 4: Biogas production from animal waste*** meets most of the criteria (13 out of 14). ***Project pipeline 3: Prevention of irreversible loss of biodiversity*** comes second in this ranking, with 10 out of 14 criteria met.

Not only do ***Project pipelines 3 and 4*** provide environmental benefits both to the Kyrgyz Republic and the regional/international community but they also contribute to the implementation of the National Poverty Reduction Strategy by creating additional job opportunities. For example, implementation of ***project pipeline 3*** (related to afforestation) can create 20 000 jobs annually for which small investments only are necessary. ***Project pipeline 4*** can also generate significant incomes for local communities.

As for ***project pipelines 1, 2 and 5***, analysis shows that these pipelines do not meet most of the criteria. ***Project pipelines 1 and 5*** in particular require huge investments which considerably exceed the potential revenue from a DFES scheme. In addition, the mobilisation of private and other domestic sources to support such pipelines is very unlikely. ***Project pipeline 2*** can be an interesting area for DFES co-financing but the existence of numerous small projects can create serious organisational problems for managers of the DFES funds, and administrative costs of managing such a pipeline could be significantly high.

In conclusion, on the basis of the above analysis, the first two most promising project pipelines that could be offered to potential creditors during individual negotiations as well as subjected to further detailed evaluation are:

- **Prevention of irreversible loss of biodiversity; and,**
- **Biogas production from animal waste.**

Table 19. Evaluation of the Proposed Project Pipelines with Regard to the Eligibility Requirements (Criteria) Defined in the Project's Terms of Reference

Criterion	Eligibility Requirements	Project Pipelines				
		1. Improvement of Wastewater Collection and Treatment in the Coastal Villages and Cities of Issyk-Kul Lake	2. Protection against Land Degradation	3. Prevention of Irreversible Loss of Biodiversity	4. Biogas Production from Animal Waste	5. Rehabilitation of Existing and Construction of New Mini Hydropower Plants
1	GLOBAL ENVIRONMENTAL BENEFITS AND FACILITATION OF THE FULFILMENT OF INTERNATIONAL ENVIRONMENTAL AGREEMENTS BY THE KYRGYZ REPUBLIC	?	+	+	+	?
2	REGIONAL ENVIRONMENTAL BENEFITS	-	+	+	-	+
3	CONTRIBUTION TO PEACE AND SECURITY IN CENTRAL ASIA BY ALLEVIATING REGIONAL AND CROSS-BORDER CONFLICTS RELATED TO THE MANAGEMENT OF SHARED AND TRANS-BOUNDARY NATURAL RESOURCES	-	-	-	+	+
4	FACILITATION OF THE ACHIEVEMENT OF WATER AND ENVIRONMENT-RELATED MILLENNIUM DEVELOPMENT GOALS	+	-	-	+	+
5	CONSISTENCY WITH COUNTRY ENVIRONMENTAL POLICY PRIORITIES (NEAP - key environmental problems)					
	unsustainable use of natural resources	+	+	+	+	?
	impact of pollution on human health	+	-	-	+	-
6	FACILITATION OF ACHIEVING POVERTY ALLEVIATION OBJECTIVES THROUGH (NPRS)					
	achieving sustainable growth	+	-	+	+	+
	generating sustainable local incomes	+	-	+	+	+
	job creation	?	+	+	+	-
7	REASONABLE ASSUMPTIONS ABOUT FINANCIAL LEVERAGE THAT CAN BE ACHIEVED WITH MATCHING GRANTS	-	+	+	+	-
8	POSSIBLE CO-FINANCING:					
	from foreign grants	+	+	+	+	-
	from private sources	-	-	-	+	+
	from other domestic sources (i.e. Environmental Funds)	-	+	+	+	-
9	POSSIBILITIES FOR REPLICATION	-	+	+	+	?

Note: [+] criterion met [-] criterion not met, [?] uncertain.

It needs to be noted that this first assessment should be further supplemented by a full economic and financial evaluation of (at least) the two most promising pipelines identified above. This full evaluation should include, among other things, analysis of the legal and regulatory framework of the sector, economic analysis and financial viability of the proposed project pipelines (including potential technologies, investment and O&M costs), potential role of markets and institutional constraints/opportunities, risks and assumptions, stakeholders' analysis, including private and public cost-benefits generated by the project, expected global benefits, public participation options, sustainability and replicability of the proposed project pipeline. Implementation modalities and budget requirements including financial options should also be analysed in detail. Additional aspects of the analysis can be considered depending on the type of the specific project pipeline.

Given the low level of revenue that can be realistically expected from potential DFES, it is only reasonable for the Kyrgyz Government to focus their attention on developing the first two most promising pipelines identified in this analysis. However, if the more optimistic scenario for the participation of more creditors materialises, other more investment intensive project pipelines can be considered. In any case, co-financing will be needed for the implementation of any of these project pipelines.

In addition, it is worth noting that even if the DFES do not materialise, the analysis of the project pipelines remains valid and could be used by the Kyrgyz Government in discussions with donors on developing donor support programmes in the country.

4. INSTITUTIONAL OPTIONS FOR GOVERNANCE AND MANAGEMENT OF THE POTENTIAL EXPENDITURE PROGRAMME

Creating the necessary institutional infrastructure to manage swapped resources is a key aspect of the successful design of a debt-for-environment swap. There are a number of institutional issues that the Kyrgyz Government will need to consider in choosing the institutional arrangement that will best fit international and national environmental and financial interests. Some of the major issues include:

- Choosing the swap model – including parties and time frame;
- Deciding on the use of an existing or establishing a new institution for expenditure management;
- Defining the rules of implementation of environmental projects.

As the above analysis shows, the potential DFES operations in the Kyrgyz Republic would be characterized by: (i) a long period of debt repayment which implies a prolonged period of disbursements for the implementation of environment projects; (ii) relatively small (hundreds of thousand of US dollars) annual flows of funds; (iii) a small expected scale of environmental projects, which means implementation of many such projects simultaneously. Obviously, institutional solutions have to account for these DFES characteristics. Whatever the final choice, the institution should be managed by domestic professionals thus also contributing to local capacity building which is a prerequisite for carrying out environmental protection on a sustainable basis.

4.1 Swap Implementation Models

The first institutional issue of swap implementation relates to participating parties. As discussed earlier, two general forms of debt-for-environment swaps, depending on the number of negotiating parties in a transaction, have been tried in the world so far:

- Bilateral (direct) swaps; and,
- Trilateral or multilateral swaps (through an intermediary).

In bilateral swaps, the main parties are the governments of creditor and debtor countries. In trilateral swaps, there is also an intermediary receiving funds from the creditor and assuming a responsibility for the implementation of environment projects in the debtor country together with the government of this country. In international practice, the intermediary role has been often played by international NGOs or international organisations, such as the World Wildlife Fund, the Conservation International (CI), the UNICEF and others. Usually, trilateral swaps are used when: (i) the creditor is a private company; (ii) transfers of money are not systematic and are organised on a case-by-case basis; (iii) environment projects are not associated with investments. Under trilateral schemes, the debtor country government assumes a somewhat reduced role and less domestic capacity for expenditure management is needed. Given the above conditions, choosing trilateral swaps is not a good option for the Kyrgyz Republic because:

- creditors in swap operations would be mostly governments;
- swaps are expected to be implemented over many years;
- the environmental projects to be supported may have a significant investment component; and,
- some domestic expenditure management capacity already exists in the country and could and should be further developed in order to implement DFES successfully.

For bilateral swaps, a special enabling clause in the agreement of the government with the Paris Club is usually required. In the case of the Kyrgyz Republic, such a clause was included in the 2002 agreement

and later reiterated in 2005. Thus, the DFES for the Kyrgyz Republic could be implemented on a **bilateral** basis involving no intermediaries between the creditor government and the government of the Kyrgyz Republic.

Both bilateral and trilateral swaps can be disbursed locally, either directly to specific projects agreed with a creditor, or can be transferred to an established financial institution, which selects projects under the supervision of relevant stakeholders, including creditors.

- **Swaps on a project-by-project basis** are transactions that tie individual swaps to specific projects selected and controlled by the creditor country and implemented by the debtor country.
- **Swaps through a domestic financial institution** are transactions that transfer money to a domestic financial institution, which manages the expenditure programme and project pipelines (including project appraisal and selection) according to procedures and criteria agreed jointly between the creditor and debtor countries.

The choice between the two options is not straightforward. It depends on the expected preferences of creditor countries, as well as on the size of the overall envelope of the swap transaction. Any successful transaction must be win-win for both parties.

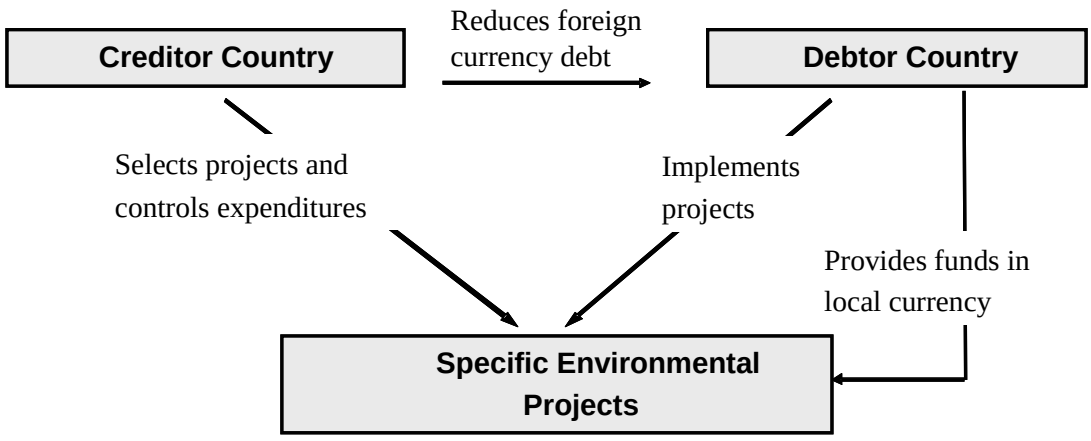
Creditors' preferences will be fully revealed only when negotiations actually begin. On the basis of international experience it can already be expected, however, that a project-specific swap may be attractive to some creditors for a number of reasons:

- It gives creditors stronger assurance regarding how exactly their money will be spent;
- It makes it easier for creditors to enforce tied procurement, hence to recuperate partly their financial losses by purchasing goods and services from creditors' suppliers;
- As an ad-hoc arrangement, it usually requires lower transaction and administrative costs. It does not involve a specialised institution to manage the project cycle. The function of overseeing the implementation of *a priori* agreed projects can be incorporated into the existing operations of government and/or non-government institutions at a low incremental cost. It can also be contracted out to short-term consultants.

Swapping debt for specific projects can be considered, if the value of the transaction is small, and tied procurement cannot be avoided. But in the latter case, the Kyrgyz government may want to decide, if the swap pays off at all.

The operational model of a bilateral swap on a project-by-project basis is presented in Figure 3 below.

Figure 3. Bilateral Swaps on a Project-to-Project Basis



The alternative option is to swap the debt through a specially established, local financial institution that would manage the whole project cycle (project identification, appraisal, financing and monitoring) under the rules and control agreed between the parties to the transaction. Project selection and procurement tends to be much more competitive in this arrangement. As experience shows, the option of establishing the financing institution to select projects on a competitive basis has several advantages:

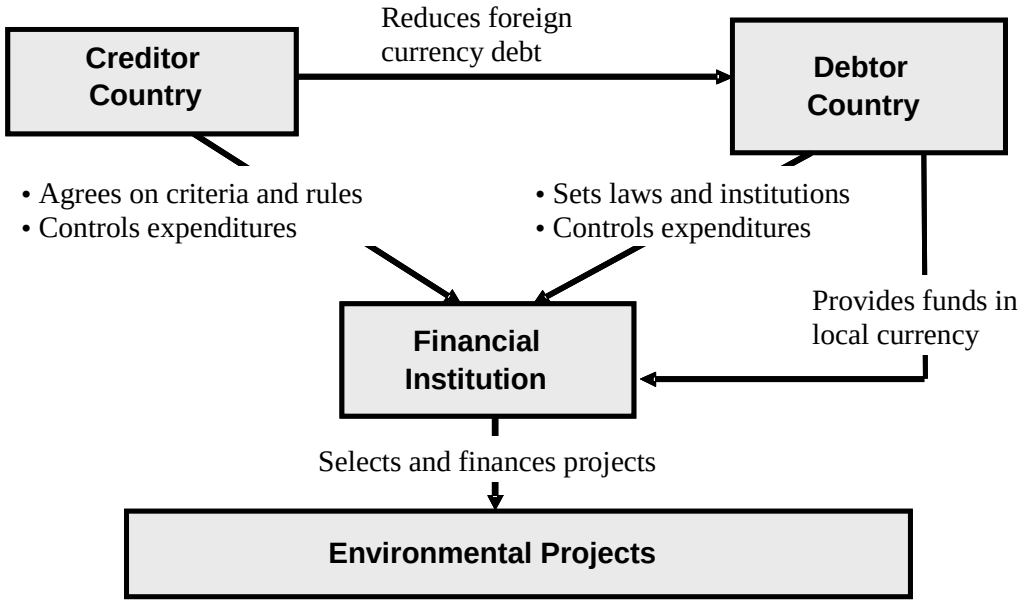
- The selection of projects on a competitive basis facilitates the more efficient use of the resources and increases the environmental benefits of the swap. In the absence of competition under the project-specific swap, suppliers from the creditor country tend to increase their prices, which may render many projects financially non-viable even with a significant subsidy.
- The establishment of a locally managed institution to administer swapped funds also increases the development benefits of the swap. When properly designed, it might contribute to the better management of local and global common goods not only by channelling resources to the right projects, but also by creating the necessary institutional infrastructure in the country.
- Having in place a transparent and credible institution, which effectively and efficiently selects and finances environmental projects, can attract additional financing from donor countries, international institutions, NGOs or other financing sources (grants, trilateral debt swaps, loans, etc.). There are many examples world-wide that good governance and effective expenditure management attract public and private finance.

However, the value added of transferring swapped funds through a financial institution must be weighed against the incremental transaction and administrative costs of setting up and operating this institution. We have estimated the transaction costs of establishing and the annual costs of running a debt-for-environment swap institution with regard to a threshold swap amount that would justify this option under the assumption that the average annual administrative costs should be a reasonably small portion (around 5%) of average annual expenditures, excluding start-up costs. We have concluded that swapping the debt of only France and Germany would not justify the establishment of a new permanent institution with a relatively sophisticated project cycle. If Russia and Turkey join, a local financial institution could become a viable option. Hence, different institutional options need to be considered.

The operational model of bilateral swaps through a local financial institution is presented in Figure 4 below.

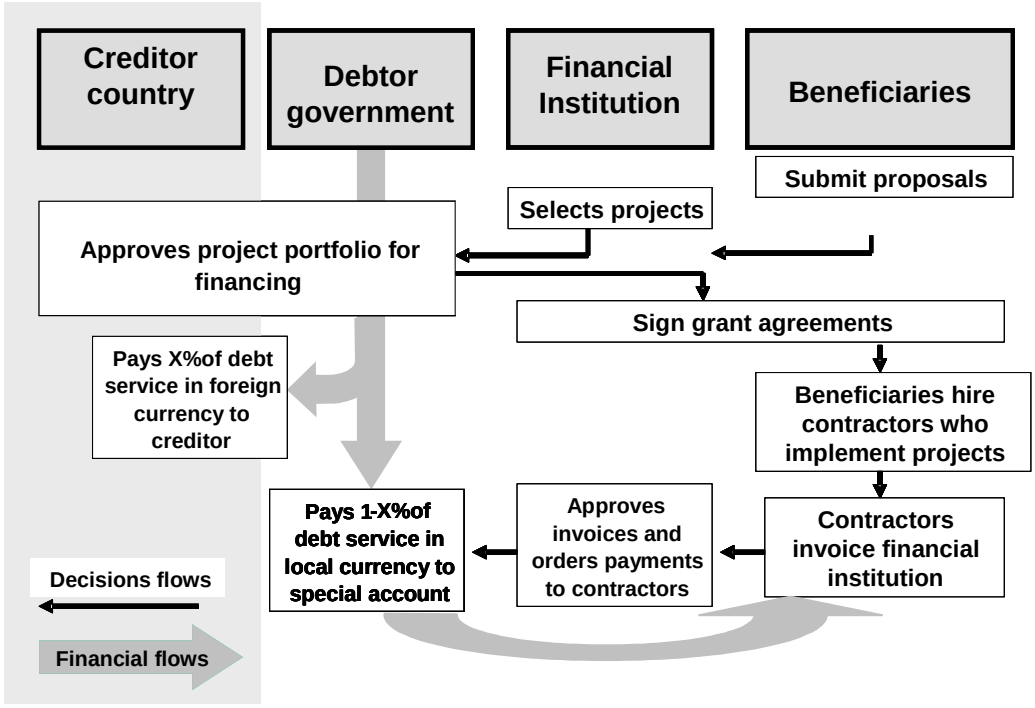
Given that (i) the aim of the DFES in the Kyrgyz Republic is to support the most cost-effective projects identified on a competitive basis and is not motivated by the need to implement a particular project only, (ii) swap resources are expected to be disbursed on an annual basis for a long period of time, and (iii) local capacity building is a crucial feature of the institutional set-up, the implementation of a DFES through a **local financial institution** is a recommended option while taking into account all considerations discussed above.

Figure 4. Bilateral Swaps Through a Local Financial Institution



In case of implementation of the DFES through a local institution, the swap operation scheme could be represented by Figure 5 below.

Figure 5. Annual Decisions and Financial Flows in Debt-for-Environment Swap in a Local Financial Institution



If administrative costs of setting up a local institution, with regard to the expected DFES revenue flows are too high, the Government may seek support from the international community (World Bank, UNDP) or seek other possible ways of integrating the management of the project cycle into other domestic (internationally-supported) institutions in the country.

4.2 Institution for Expenditure Management

If a decision is made to set up an institution to manage DFES resources, there are a number of choices that will have to be made at a later time. These include, among others, the choice of a suitable legal, cost-effective form and an appropriate life cycle of the institution.

4.2.1 Legal Status

Four main legal forms of locally established institutions have so far been used in various countries to manage debt-for-environment swaps. These are: the government agency, the trust fund, the public foundation, and the association. A short description of these forms is provided below.

The Government-Owned Agency (legal person in public law) would require a government (or presidential) Decree or a Parliamentary Act to be established. Many comprehensive environmental funds capitalised by earmarked environmental fees and fines in CEE and EECCA are (or have been) established in this way. Such an agency is usually set up jointly by the Ministry of Finance and the Ministry of Environment. The Ministry of Environment manages the project cycle while the Ministry of Finance executes the financing transactions through an escrow account in the Central Bank of the country or in the Bank of International Settlements.

The Trust Fund. Trust funds are instruments that are developed and used in the countries usually referred to as "common law" countries, i.e. essentially the current or former member countries of the Commonwealth and the United States, and are not applicable elsewhere, e.g. in the Kyrgyz Republic, which is a "civil law" country.

The Public Foundation. The functional substitute for charitable trusts in the countries, whose legal system is based on "civil law", is the "foundation". Foundations exist in most continental European countries and are widely used by major environmental institutions there. For example, the Polish debt-for-environment swap fund (the EcoFund) has the status of a public foundation defined in the Civil Code and in the special Law on Foundations.

The Association under Civil Law can be established by private individuals and institutions to serve specified public interest or the common interest of the interested parties. In contrast to the foundation, the association usually requires a collective effort of a larger number of parties. Sometimes, there is a required minimum number of people before a group can be considered an association. This can be a limiting factor for the institution managing debt-for-environment swaps. Too many decision-makers could dissipate responsibilities for decisions, compromise operational efficiency and increase transaction costs.

In the case of the Kyrgyz Republic, the selection of the legal form of the institution should be determined by its operational modalities and the laws in force. In accordance with the Kyrgyz legislation, to successfully operate environmental investment projects under a DFES scheme, the institution needs to:

- be non-commercial, as the goal of its establishment is debt relief and environmental improvements, and not profit-making;
- have the right to carry out an independent economic activity, including offering credits and grants to legal and physical persons in the country;
- have the right to receive funds from the government budget of the Kyrgyz Republic and possibly attract and spend grants of international organisations;

- be subject to independent audit of its activities;
- be managed jointly by the Kyrgyz Government, Governments of creditor countries, and possibly international organisations and/or Kyrgyz civil society organisations.

The Kyrgyz law recognises the following legal forms of non-profit organisations[23]: (i) The Public Association; (ii) The Association of Legal Entities; (iii) The Foundation; and (iv) The Agency[24]. Of the above legal forms of organisation, neither the Public Association nor the Association of Legal Entities can apply, because they do not fit into the principles of the formation of the institution. The Public Association is an association of individuals and, therefore, it is not appropriate. The Association of Legal Entities is a group of profit-making organisations grouped together for the purpose of coordinating their business activities. As far as one of the founders of the institution, as described below, must be the state, which is not a profit-making organisation, The Public Association as a legal form is not suitable for the institution, either. The Foundation is also not the form suitable for the institution. Pursuant to Article 162 of the Civil Code[25] of the Kyrgyz Republic, foundations are financed through non-governmental donations, whereas the institution is supposed to be financed using governmental funds generated as part of the external debt relief.

The Agency is the only legal form appropriate for the institution. Under the Kyrgyz Law, the Agency is an organisation created for the purpose of carrying out managerial, public, cultural and other non-profit functions. The founders give property to the agency, finance its operations, determine the governance structure and control the application of the assets given to the institution. The property given to the agency by the founders is the ownership of the founders. The agency is liquidated by the decision of the founders, and the property which remains after the liquidation must be returned to the founders.

One of the founders of the agency must necessarily be the state represented by the authorised state agency, since one of the sources of financing of the agency will be the funds of the government budget intended for the repayment of external debt. The Ministry of Finance of the Kyrgyz Republic (the "Ministry of Finance") or other agency authorised by the Government of the Kyrgyz Republic (the "Government") can act as a founder or one of the founders of the institution on behalf of the state. In accordance with the Law of the Kyrgyz Republic "On State and Non-State Debt" dated 21 September 2001, the authority to administer the public debt is conferred on the Ministry of Finance, the only agent of the Government administering state debt. The Ministry of Finance is authorised on behalf of the Government to keep records of state debt, plan necessary borrowings, develop the projects of borrowing programmes, provide sub-loans, control the allocation and repayment of loans, as well as the performance of other debt obligations related to loans. Pursuant to Article 8(4) of the above Law, the external loan must be obtained, repaid and discharged through the financial agent of the Government appointed in accordance with the laws of the Kyrgyz Republic. The procedure of attracting, distributing and repaying the external loan must be set forth by the respective decision of the Government. Accounting for the scope of activities of the proposed institution, the Ministry of Ecology and Emergencies could become another founder representing the state.

Apart from the state, the institution can be founded by international organisations, governments of creditor countries and local NGOs. However, the persons considering joining the institution as its founders should

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[23] Pursuant to the Kyrgyz Law, a non-profit organisation is a volunteer, self-governing organisation formed by individuals and/or legal entities on the basis of common interests to satisfy their spiritual or other non-material needs for the benefit of its members and/or the entire society, the primary purpose of which is not to make profit, and the profit of which is not distributed among its members, founders and officers.

[24] In Russian «Учреждение».

[25] The first part of the Civil Code of the Kyrgyz Republic came into force on May 8, 1996 replacing the previous Civil Code of the Kirghiz Soviet Socialist Republic dated 30.07.1964. The second part of the Civil Code came into force on January 5, 1998.

take into account that pursuant to Article 164 of the Civil Code, a founder bears a secondary liability for the obligations of the institution, should the funds of the institution be insufficient to repay its debts.

Thus, the institution must be founded by the state represented by the state agency authorised by the Government. International organisations, governments of creditor countries and local NGOs can be involved as founders of the institution as well[26].

Under the Kyrgyz Law, any duly registered legal entity, including an agency, has the right to carry out independent business activities, including the offering of loans/grants and other financial aid, obtaining and spending grants from international organisations, and permitting independent audits[27]. The agency has the right to obtain funds from the government budget, if, as mentioned above, its founder (or one of the founders) is the state represented by its authorised agency. In addition, for the Government to have the right to transfer to the agency the state funds intended for the repayment of state debt to creditor countries or international organisations, an international agreement ratified by the Kyrgyz Republic is necessary. It is reasonable that the international agreement would set forth the goals, purposes and organisational principles of the institution. The international agreement is also necessary, because it will secure the right of the Government to fulfil its debt obligations to international organisations or creditor countries by making payments to the institution. Thus, the agency has the right to engage in all required activities.

The effective management of the institution can be ensured through the formation of a Governing Board comprised of the representatives of state agencies, creditor countries, international organisations and NGOs. The competence of the Governing Board, number of its members, voting procedure and other relevant issues will be determined in accordance with a Charter that needs to be developed. The members of the Governing Board will be elected by the founders. To prevent any discretionary decisions of the state in respect to the election of the members of the Governing Board, it is preferable that the issues of the formation, election, representation in the Governing Board as well as its competences be settled in the international agreement.

Theoretically, one option for the institutional arrangement could be an **off-budget ("extra-budgetary") fund**. As far as "extra-budgetary funds" are concerned (although the Kyrgyz Law does not give a definition of "extra-budgetary" funds) according to Article 30 of the Law of the Kyrgyz Republic "On Main Principles of the Budget Law" dated 21 September 2001, only the Social Fund, Mandatory Medical Insurance Fund, and funds formed out of voluntary donations and charity contributions are recognised as "extra-budgetary funds". Thus, it can be inferred that non-budgetary funds are the funds formed by the state and using the monies accumulated by the state and not accounted for in the state budget. The above Article 30 forbids creating non-budgetary funds other than those mentioned in the Law. Therefore, a non-budgetary fund is not an appropriate legal form for the institution.

Two examples of institutions currently operating in the Kyrgyz Republic may shed additional light on the existing legal form options. One is the **Republican Environmental Fund** (REF) of the Ministry of Ecology and Emergencies and the other is the Kyrgyz Republic's **Community Development and Investment Agency** (CDIA).

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[26] The state can be a sole founder of the institution, but in this case, the state as a sole founder will have discretion to authorise any amendments to its charter and control the application of monies of the institution and will be deemed as a sole owner of the assets of the institution. To limit the discretionary powers of the state, it is necessary to execute the international agreement which would set forth the rules governing the formation, management and operations of the institution, as discussed below.

[27] As far as the institution will use the funds accounted for in the state budget, the audit of the institution, in addition to independent audits, will be conducted also by the Audit Chamber of the Kyrgyz Republic in accordance with the Law of the Kyrgyz Republic "On Audit Chamber". In accordance with the provisions of this Law, the Audit Chamber may conduct audits with regard to the efficiency of the use of governmental funds.

The Republican Environmental Fund was established in accordance with the Edict of the President of the Kyrgyz Republic No. 239 "On Local and Republican Environmental Funds in the Kyrgyz Republic" dated 21 July 1992 and the Law "On Environment Protection" dated 16 June 1999. Currently, the REF is operating on the basis of the Regulation on the Republican Environmental Fund of the Ministry of Ecology and Emergencies (MEE) approved by the Decision of the MEE Board dated 24 March 2003. The REF was established as a non-profit legal entity in the form of an agency. The REF is founded by the state represented by the MEE. The REF, which includes and is comprised of the local territorial environmental funds, is a state agency financed from the government budget, with the proceeds of non-tax payments made by legal entities and individuals as mandatory deductions for the purposes of environment protection.

The REF's highest governing body is the Management Board headed by the Minister of MEE. Members of the Management Board are elected by the Board of MEE. The REF in its activities, is accountable to and governed by the MEE. The REF's property is the ownership of the state represented by the MEE. The executive directorship headed by the Executive Director is the executive body of the REF. The Executive Director is nominated by the Minister of MEE and appointed by the Prime-Minister.

Previously, the REF's monies and property were formed out of mandatory payments received by the REF from the territorial environmental funds, which were not accounted for in the state budget and had the status of non-budgetary funds, as well as from donations of individuals and legal entities. Pursuant to the Law of the Kyrgyz Republic "On Amending the Law on Main Principles of Budgetary Law in the Kyrgyz Republic" dated 20 July 2004, the monies allocated to the environmental funds were accounted for in the state budget as non-tax payments (earmarked funds). Based on the foregoing, the REF, comprised of the local territorial environmental funds, is an institution financed from the state budget.

Thus, with respect to the institution under consideration, the form and experience of the REF cannot apply, as it suggests full and sole control of the state over the formation and operation of the REF and does not allow for a joint management via a Governing Board.

The Community Development and Investment Agency (CDIA) was established on the basis of the ratified Grant Agreements between the Government of the Kyrgyz Republic and the International Development Association and the Edict of the President of the Kyrgyz Republic No. 330 "On the Creation of the Kyrgyz Republic's Community Development and Investment Agency" dated 15 October 2003. CDIA was set up as a non-profit legal entity in the form of an agency. CDIA was founded by the Administration of the President, the Association of Self-Government Institutions of Villages and Settlements of the Kyrgyz Republic and by the public association "Counterpart–Sheriktesh"[28]. The main mission of CDIA is to help reduce poverty in rural areas and small towns in the country by providing financial and other support to local communities and communal organisations in the form of grants, and loans with the aim of improving rural and urban infrastructure and the development of small and medium enterprises.

The highest governing body of CDIA is the Supervisory Board which consists of seven representatives of state agencies, seven representatives of local self-government institutions, and seven representatives of local NGOs. The members of the Supervisory Board act on the *pro bono publico* basis (i.e. without being paid). The executive director, accountable to the Supervisory Board, is appointed for a term of four years, which is renewable for another four years for an unlimited number of times. The first Executive Director was appointed by the Edict of the President of the Kyrgyz Republic, the following Executive Directors are to be appointed by the Supervisory Board, by a simple majority of votes.

The funds and assets of CDIA are formed out of the proceeds of the state budget transferred to CDIA, grants, credits, loans, voluntary contributions from individuals and other sources not prohibited by law. The activities of CDIA may be subject to independent audit and auditors' reports are approved by the Supervisory Board.

[28] A daughter organisation of the "Counterpart Consortium" international NGO.

CDIA carries out its independent operations for which its Executive Director is responsible. According to the Charter of CDIA, any interference with its activities is forbidden. CDIA possesses the property given to it on the right of operative management.

In general, with respect to the formation of the institution in mind, the CDIA organisational and management structure is appropriate and can serve as a model.

Costs of running the institution. An important aspect when choosing the institutional arrangement is the operational cost of setting up and maintaining the institution. The institution should be staffed with competent professionals free of any vested interests and receiving competitive salaries. The rough estimates provided in Table 20 below are based on the assumption that the staff of the institution would consist of four people; the staff should be able to communicate effectively with their counterparts through web-sites, telephone/fax and in person; operations of the Supervisory Board would be covered by the founders, not by the institution. These estimates suggest that the creation of a separate institution could be costly consuming 10% or more of the expected annual amount of disbursements. Therefore, options of utilising existing domestic financial facilities (such as CDIA) could be considered in order to minimise administrative costs.

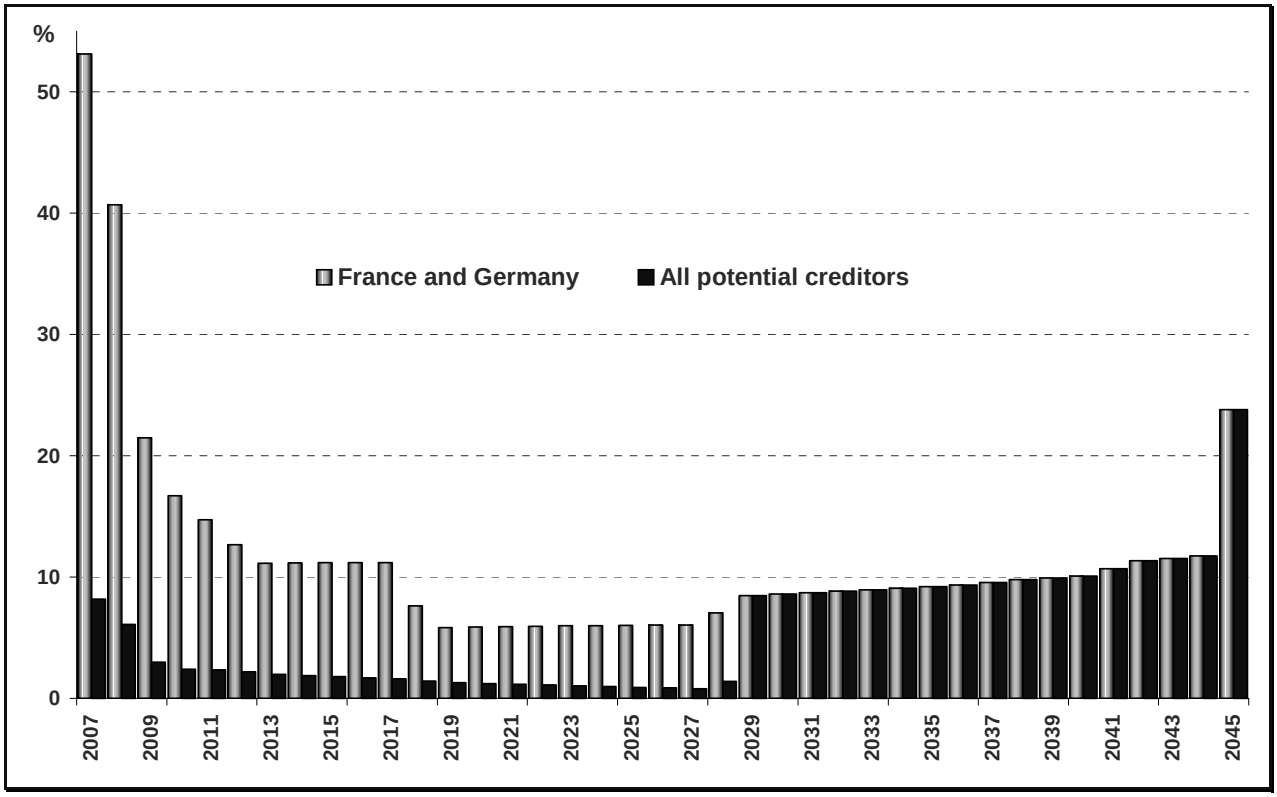
Table 20. Estimated Administrative Costs of the Institution

Item	Measurement Unit	Unit Cost, USD	Number of Units	Amount, USD
Start-up costs				
Office equipment (computers, copy machine, etc.)	Lump sum			2 800
Web-site development	Lump sum			200
Total				**3 000**
Recurrent costs (per annum)				
Salaries				21 600
Director	Man-month	700	12	8 400
Experts (2 people)	Man-month	400	2x12	9 600
Accountant	Man-month	300	12	3 600
Deductions to the Social Fund (24% of salaries)				5 184
Office space rent (60 m^2)	Month	600	12	7 200
In-country travel	Month	125	12	1 500
Communications	Month	100	12	1 200
Stationery and materials (cartridges, etc.)	Month	60	12	720
Total				**37 404**

The above estimates are based on costs reflecting the local prices of goods and services. It is assumed that the institution employs three specialists and is served by one professional accountant. Such an institution needs as a minimum USD 40.4 thousands in the first year of operations and about USD 37.4 in any subsequent year. If the case of the Polish EcoFund is taken as a benchmark, where the upper bound of the share of administrative costs in total expenditures is set at 5%, it seems that the potential Kyrgyz institution will not be able to keep this standard even with such minimum costs assumptions. Chart 10 below presents the share of institutional costs in available expenditures for two scenarios: (1) with the four potential creditors participating in the scheme and (2) only France and Germany participating in the DFES. When all creditors participate, the institution is financially viable from the outset of its operations, while with the participation of Germany and France only, external support will be necessary during the first few years of operation. Given that most likely the first swap will be arranged with one creditor only and it will take time

before other creditors join (if at all), the Kyrgyz Government should either seek support from the international community (World Bank, UNDP) or consider utilising existing institutional structures in the country.

Chart 10. Share of Institutional Costs in Available Funds from DFES with Different Creditors' Participation (%)



Source: Own calculations.

4.2.2 Life Cycle of the Institution

Another issue to consider in choosing the institutional arrangement for managing potential DFES resources is the life cycle of the institution. The following four main forms are used in international practice:

- The endowment fund, which is created by single discrete transfers of financial assets. These assets sit in a bank account as an endowment or are invested in other revenue generating assets (e.g. government bonds, stocks), and the institution can disburse only net income earned on these assets. To make these investments possible, mature financial markets are needed. Fund management requires a sufficient degree of sophistication in management and, therefore, is costly. The debtor usually has no control over the endowment, so political risks of debtor liabilities are low; hence, this is a convenient feature for trilateral swaps. However, such a form of fund usually provides relatively small amounts of money for environmental projects in comparison to the endowment.
- The sinking fund, which is created by single small transfers of assets; disburses both net income and principal. Management of this type of fund is simpler. It is also used mainly in trilateral swaps. Once initial capital is provided, this fund is not further replenished.
- The revolving fund, which is replenished by its own operations (loans to clients) or by new injections of funds. This form is suitable for larger swaps implemented over the debt service

period, so that the inflow of money is relatively smooth. The fund receives a new portion of resources each year. It is also simpler in management in comparison to an endowment fund. The Polish debt-for-environment fund is an example of a revolving fund. The Polish EcoFnd receives bi-annual transfers from the Ministry of Finance and knows the schedule of its core revenue several years in advance. Obviously, when new and additional funds are no longer added, the fund has a choice either to sink or to establish an endowment and live on the net income for perpetuity.

- The modular fund, which is a mix of all others. It allows for the existence of multiple accounts and different financing modes and "windows" in one institution. It has some endowment, some sinking, some revolving components depending on the creditor/investor/donor preferences. Obviously, this form is rather complicated in management.

It seems that in the Kyrgyz Republic's circumstances of bilateral swaps and a desired simplicity of management, a **revolving fund solution** is the most suitable institutional arrangement.

4.3 Governance and Management

Accountability to all stakeholders, and shielding from *ad hoc* political interference, will be crucial for the financial institution to gain credibility domestically and internationally. This can be achieved, among others, through objective, accountable, transparent and highly professional operations. Credibility to stakeholders and demonstrated ability to achieve stated objectives efficiently will also be decisive factors for its ability to leverage additional local and foreign financial resources.

Box 7: Minimum Criteria for Good Governance of the Financial Institution

Experience of the already functioning Funds suggests that the following requirements of the governance structure should be mandatory, if the institution is to become a credible partner both domestically and internationally:

- Written transparent procedures of decision-making;
- Well defined, expenditure programmes agreed with all stakeholders;
- Accountability, transparency, anti-corruption measures;
- Creditors' supervision and control embedded into the procedures and decision-making;
- Operational autonomy of the executive management;
- Objective, unambiguous and meaningful selection criteria (cost-effectiveness);
- Discretion subject to procedures;
- High qualifications and integrity of staff.

An essential factor for ensuring the accountability of the domestic financial institution will be the proper design of its governance structure and management system. It must enable all main parties to be involved in the key decision making processes, with balanced representation and voting power and with effective powers to oversee implementation of decisions. The organisational structure should allow creditor countries, the government of the Kyrgyz Republic and other internal and external stakeholders, such as NGOs, academic institutions, contributing donors, etc., to effectively incorporate their interests into an expenditure programme with appropriate checks and balances.

The governing or supervisory body of the financial institution should be a platform where a variety of vested interests of different stakeholders should be represented, checked and balanced to provide an efficient and credible outcome. Internationally-recognised good practices of public expenditure management show that for all governing bodies to be accountable there must be a clear division of responsibilities between the governing body and the executive body. In particular, responsibility for programming should be separated from the responsibility for selection of individual projects to be financed by the DFES resources.

The governing body should be held accountable for establishing strategic objectives, eligibility and appraisal criteria, "rules of the game" and for supervision. An executive body would be responsible for implementation of these established rules of the game in the day-to-day operations. There will always be a strong temptation for different political stakeholders represented in the governing body to cross the line between governing and managing daily operations, and in particular to influence decisions about selecting individual projects. International experience shows clearly that if this happens, the public fund becomes a battlefield of vested interest groups, losing transparency, credibility, efficiency and effectiveness.

The day-to-day management of the project cycle, in particular appraisal and selection of individual projects, should be vested with an operationally independent executive management unit, staffed with non-political professionals and held strongly accountable for their performance according to the rules established by the charter and by the governing body.

Annex 8 contains a more detailed proposal of the responsibilities, membership and voting system of a governing body, and the responsibilities of the executive management unit. Designing a financial institution to manage DFES expenditure in the Kyrgyz Republic along the lines of this proposal would increase the credibility of the Kyrgyz institutional arrangement to foreign and domestic stakeholders.

4.4 Project Cycle Management

A domestic financial institution would need to have an established project cycle with clearly defined stages, responsibilities, procedures and project selection criteria.

The typical stages of a project cycle of a public funding agency are:

- Identification of potential projects;
- Submitting applications;
- Appraisal and selection of submitted projects;
- Approval of selected projects;
- Contracting and financing (transfers of money);
- Monitoring and evaluation of projects and of post-implementation results.

Because of the underdeveloped market for environmental investments in the Kyrgyz Republic, good projects may not be easy to find. Hence, any institution managing an expenditure programme financed by a swap would have to be very proactive in the identification of eligible and promising projects in each priority area. Owners of these projects would need to be clearly informed about funding opportunities and conditions. Otherwise, they may not apply and the project pipeline could remain empty.

Some applicants may need assistance in preparation of their projects and in submitting good applications, especially in the first years of operations of the scheme. In principle, preparation of individual projects should not be financed from the swap. Assistance provided to some beneficiaries, and not to others, gives the former an unfair advantage over those who compete for support on their own. Such a situation may also distort the development of the market for independent consulting services in project preparation. Instead, technical training in project preparation and application for funding, open to all potential beneficiaries, could be organised and financed by the institution.

Procedures and criteria for appraisal and selection of projects will be the cornerstone of credibility, accountability and transparency of the scheme to various stakeholders. Good international standards of project appraisal in the pubic sector will need to be followed, such as those contained in the OECD Good Practices of Public Environmental Expenditure Management. The principles and criteria of project appraisal and ranking should be defined in the institution's Charter and further specified in operational terms in documents approved by the governing board.

Appraisal cycles should have fixed intervals and deadlines for submitting applications by applicants and for making decisions by the institution. The frequency will need to be adjusted to the practical needs of the

project pipeline. Large, capital investment projects may need to be appraised in two stages – in the first stage, short and relatively simple applications should be screened against eligibility criteria in order to reject non-eligible projects early and save time and resources of both the fund and the rejected applicants. Applicants who pass this first eligibility test should be asked to prepare a more detailed application and submit all supporting documentation (e.g. feasibility studies, environmental impact assessments, environmental and construction permits, etc.).

On the basis of full and detailed project information, appraisal can be conducted by applying appraisal criteria to compare projects against one another or against some benchmark. Appraisal criteria should be few, relatively simple, measurable and objective. They should allow as little discretionary judgments, as practically possible. **Cost-effectiveness** (the ratio of the discounted, lifetime costs of the project to its physical environmental/social effects) should be a prominent appraisal criterion to ensure that maximum effect is achieved by the limited resources generated by the DFES. Beneficiaries would need to be requested to demonstrate the financial viability of their projects (with support by the DFES institution). Beneficiaries should also give reasonable assurance that they will not go bankrupt during the implementation phase and during the reasonably long period of project operation (or to give assurance of sustainability of environmental and social benefits in case of bankruptcy). During each appraisal session all projects under consideration should be ranked from the highest to the lowest score until their cumulative value exhausts all money set aside for a given appraisal session.

After appraisal and ranking are conducted by the executive body, the governing board (political body) should receive the entire, ranked project portfolio for final approval, with merit-based written justification of each project. It is advisable that the governing board have the right to veto individual projects, but not have the right to modify the sequence of projects on the ranking list or to add new projects by-passing technical appraisal.

Contracting and disbursement. After approval of projects by the governing board, actual financing to the beneficiary would be provided on the basis of a contract negotiated with and signed between the latter and the appropriate party on the government side. It is advisable that disbursement of larger amounts for investment projects should be made after the project has been implemented, and only upon original invoices issued by the implementing firm/contractor, which in most cases will be different from the beneficiary. Making advance payments should be avoided in principle, and if applied, must involve strict safeguards against diverting money by beneficiaries to purposes other than those agreed in the contract.

Project monitoring and evaluation. The role and responsibilities of the financial institution managing DFES should also include monitoring of implementation of projects and ex-post evaluation of results achieved. The institution should retain the contractual right to terminate the agreement and instruments to revoke funds, if the guarantee does not comply with the terms and conditions agreed in the contract.

The financial institution should produce annual financial reports according to international accounting and reporting standards. Activity reports should also be prepared annually to allow for a fair assessment of performance of expenditure. Financial reports will need to be regularly audited by international independent chartered accountants as well as international organisations.

Regardless of the legal form of the institution, the project cycle should be managed according to written, transparent procedures. Project appraisal criteria should be objective, transparent and unambiguous. Cost-effectiveness should be a key quantitative basis for appraisal and selection of projects. Subjective, discretionary elements in project selection should be subject to procedures. For larger investment projects, a two-stage appraisal should be used.

4.4.1 Disbursement Mechanisms

Because of external benefits and common goods provided by the projects to be supported under the debt-for-environment swap scheme, financing will need to be provided on terms more favourable than those available on the market. "Soft" financing can be provided in a variety of forms, such as direct grants, low interest loans, high risk loan guarantees or equity with low expected return and higher accepted risk.

From the point of view of financial sustainability of the domestic institution, it would be attractive to use **direct loans** to disburse its resources. Loans could provide some return on assets to replenish the fund. Moreover, loans to projects that have potential to generate financial revenue can give project owners incentives to implement projects quickly and efficiently.

However, the use of loans, loan guarantees or equity financing would require significant capacity to manage associated risks. The needed capacity could be built within the institution by establishing a loan department with at least two to three experienced credit analysts to analyse the creditworthiness and collateral of borrowers. Capacity can also be bought on the market by contracting out credit analysis to commercial banks for a fee (and for some risk share). Without up-front capacity, a loan portfolio usually quickly turns into a stock of worthless assets. Effective lending would also require a critical mass of legal and institutional infrastructure in the country for arbitrage and contractual settlements, to say nothing of a minimum level of maturity of financial markets. All these conditions are still under development in the Kyrgyz Republic.

Before loans are considered in any form, all risks will have to be identified and mitigated. In addition, a detailed market analysis will have to determine if eligible beneficiaries will actually be willing to take loans to finance environmental projects eligible under the DFES. More risky instruments, such as loan guarantees or equity investments should not be envisaged for the debt swap institution at all, except in a very distant future, but then the rationale for such an institution to be located in the public sector will need to be reconsidered.

A **direct grant** is the most transparent form of government financing, the least risky and the easiest to manage. In the European tradition of public finance, it is also considered the most market-friendly form of government financing, because it does not compete with financial products provided by the private financial sector. Therefore, a lower risk strategy would be to launch the DFES institution as a revolving fund disbursing grants only. During the first few years of operation, it could accumulate experience with financial management, contracting, project appraisal and implementation monitoring. This would provide time to better understand the situation on the environmental investments market, typical funding needs of projects and risks. Should conditions allow, the governing body could consider introducing other disbursement instruments, such as soft loans or interest subsidies.

To maximise its environmental effectiveness, the financial institution should use its limited resources to mobilise additional finance for environmental improvements. This could be done by providing matching grants covering only a limited portion of the project financial needs. The share of grant in the eligible project cost (the rate of assistance) may be different for different projects, depending on the priority area, type of project (e.g. its capacity to generate revenues), and type of beneficiary. Criteria for determining the maximum rate of grant should be relatively simple and transparent. Temptations to use sophisticated and costly models (e.g. incremental cost as used in GEF grants) should be cautiously treated and considered after sufficient experience and capacity is accumulated in-house. Annex 7 contains a simple matrix of a possible differentiation of rates of grant, for illustrative purposes.

Following on from the above analysis, it is obvious that **grants** constitute the most suitable form of disbursements in the conditions of the Kyrgyz Republic with its infant financial market and practical impossibility to make any guarantees by any public institution. As institutional capacity and financial markets develop, other financial products can be considered. A DFES institution should never finance

100% of project costs. Co-financing should always be required to achieve financial leverage and additionality.

4.4.2 Procurement Rules

A grant agreement between the institution and beneficiaries should always include a clause on the procedure to purchase goods and services financed by the swap resources.

Competition and **non-discrimination** for any party are the recommended rules of procurement. These are seen as tools that can help achieve transparency and cost-effectiveness in purchasing goods and services financed by the swap.

Some creditors may insist on limiting competition in procurement to their own suppliers (e.g. purchase of equipment produced only in the creditor country). However, this would most likely increase project costs significantly. This implies some trade-offs between efficiency and the incentives to creditor countries to make swap transactions.

The Kyrgyz Republic should at least insist on allowing competition between domestic and creditor country firms. Otherwise development objectives of the scheme would be jeopardised. Moreover, if more than one creditor agrees on a swap, the government may propose procurement procedures similar to those of the Polish EcoFund, where competition is open to both Polish firms and firms from all countries participating in the swap (OECD, 1998). This so-called *geographical distribution* rule - widely applied in the European Community (EC) programmes - offers every participating donor a possibility to recapture (in the form of contracts) some share of the funds foregone. Even though this is not a perfect solution, geographical distribution of contracts is a more efficient alternative than tied procurement, and it has proved viable in EC practice (Tomasz Zylicz, 1992).

In conclusion, bilateral swaps managed through a local financial institution are the best institutional arrangement for the Kyrgyz Republic. The final choice, however, will depend on actual negotiated swaps and subsequent resources generated. If the swap amounts are too small, the Kyrgyz Government may consider implementing individual projects instead but this should be a second-best option. As the probability of having only one or two swaps is very high, and in order to minimise costs, the Kyrgyz Government may consider using existing domestic institutional arrangements with a proven track record and open a DFES “window” there. If more swaps are negotiated, an individual institution may need to be set-up to better account for the specific concerns of creditors and potential donors. Whatever the choice of the institutional arrangement, however, it is important that the institution is managed by local staff, selects projects for financing on a competitive basis and builds capacity of both managers and applicants as the best way to ensure sustainability of environmental protection in the country.

5. CONCLUSIONS AND FURTHER ACTIONS

The DFES mechanism is relevant for the Kyrgyz Republic, particularly given the significant needs for environmental financing and the fact that environmental expenditure is not a priority in the Public Investment Programme or in other sources. Therefore, arranging a DFES could help address some of the most serious environmental challenges in the country.

With the 2005 Paris Club arrangement, the Government of the Kyrgyz Republic committed itself to not seeking further treatment from the Paris Club. With no room for further debt relief, the government may be interested in additional options to limit the debt burden through debt swap operations.

Given the limited scope of public expenditures on environment, DFES is the recommended instrument to apply. It is worth mentioning the positive spill-overs of the DFES operation, namely the possibility to foster economic development and alleviate poverty.

The results of the feasibility study show that the amount available through a potential DFES would be limited and spread over time. With a 20% conversion rate, the available funds are estimated in the range of USD 70-600 thousand annually with the participation of two of the creditors: Germany and France[29] (Germany's contribution will be about 90% of this amount). This estimate should be compared with the level of public investment in the environment, which amounted to about USD 900 000 in 2003. If Russia and/or Turkey join the programme, this would significantly increase the amount available for DFES. This second scenario, however, is less realistic, given the lack of debt-for-environment swap experience these countries have and their potentially different preferences (debt-for-equity swap). A positive track record may generate new swap opportunities in the future, in particular with neighbouring countries (China, Uzbekistan).

Although the potential amount seems to be modest, the resources could significantly contribute to supporting environmental projects. Given present economic conditions, such projects stand little chance of getting financing through regular budgetary decision-making, despite having been identified as priorities. Assuming that additional donor support could be raised, these numbers could further increase. There is also a chance of increasing available funds though co-financing from the budget (some switch in the PIP priorities would be necessary) or using privatisation funds (in line with the debt reduction strategy).

Special attention should be paid to macroeconomic issues. The debt repayment problems were caused mainly by macroeconomic developments – the USD stock of debt rose by less than programmed. Instead, the USD GDP was far below projections and the size of the PIP and current account deficits were higher than forecast. Case studies stress the importance of macroeconomic risks for the success of DFES, therefore potential developments in GDP, balance of payments and public investments should be strictly monitored.

The experience of countries successfully implementing DFES schemes shows that irrespective of the institutional set-up for managing DFES resources, creditors should be convinced that the country will have institutional capacity to manage foreign expenditure in a transparent, effective and efficient manner in accordance with good international standards. For this purpose, a well-developed and justified expenditure

[29] Indeed, such a low level of financial flows might be a disincentive for creditors, who might consider that transaction costs associated with setting and monitoring the swap are relatively too high.

programme based on transparent and robust project selection criteria and implementation rules and procedures should be developed.

Establishing a credible expenditure programme that responds to priority concerns of both creditors and the Kyrgyz government will be essential to gain support for a debt-for-environment swap. The proposed programme should be narrowly focused on a few priorities and demonstrate how a solid pipeline of projects could be prepared and supported to meet its objectives. A review of the Kyrgyz environmental priorities and creditors' preferences suggests that the most promising priority areas could be those which aim at:

- Reducing pollution of regional waters;
- Protecting biological diversity; and,
- Reducing emissions of greenhouse gases which affect the global climate.

Within each priority area, preliminary identification of project opportunities has been conducted with a view to identifying the types of projects that could achieve environmental benefits together with poverty reduction, local economic development and sustainable growth and international security goals. In addition, particular attention has been paid to projects which aim at solving problems common to the entire Central Asian region, such as soil degradation, erosion and desertification.

Given the potential DFES resources, the 2 most promising pipelines identified during the analysis are:

1. Biogas production from animal waste, and;
2. Prevention of irreversible biodiversity loss.

Taking into account the possible size of the swap, additional sources of financing would be required to support any larger project pipelines. Therefore, careful selection of the most cost-effective projects, and requirements to co-finance projects from other sources, would need to be the cornerstones of project selection in order to make a real difference in any of the priority areas listed above.

The Kyrgyz authorities still have to reflect on the most appropriate institutional set-up to manage, monitor and report on the expenditure programme. Alternative tools and procedures have to be assessed and discussed with creditors that will take into account the nature of the programme and the institutional capacity in the country. As a starting point, the Kyrgyz Government is considering using existing institutional arrangements in the country in order to save on administrative costs. Finally, swapping debt for specific projects may also be considered if the value of the swap is small. However, in such a case, the Kyrgyz Government will need to decide if the swap is worthwhile at all. In general though, even if a swap does not materialise, the proposed pipeline can be used in discussions with donors when preparing donor support programmes for the Kyrgyz Republic.

Preparation for real transactions and financial transfers under the debt-for-environment swap scheme is not going to be short, easy and cheap. However, several internal and external circumstances work in favour of the Kyrgyz Republic. The country has some "swappable" debt structure and is in an enabling economic situation and debt management cycle. The government has undertaken the right steps so far, and there is a commitment to such a solution not only in the Ministry of Ecology and Emergencies, but in other government agencies as well, and most importantly the Ministry of Finance which will be leading negotiations with creditors.

The international community seems to be supportive of Kyrgyz efforts in its preparatory activities. Debt-for-environment swaps were identified as a promising area of international co-operation on environment and poverty reduction by the OECD Global Forum for Sustainable Development in April 2002. The Kyrgyz Republic is covered by the International Initiative to Promote Poverty Reduction, Growth and Debt Sustainability in Low-Income CIS Countries, in the framework of which it can be raised. Debt-for-environment swaps stand as a prominent objective in the East-West Partnership, EECCA Environmental

Strategy, which was endorsed by Environment Ministers during the "Environment for Europe" Ministerial Conference in Kiev in May 2003.

Co-operation within the framework of the OECD/EAP Task Force has already begun, and this pre-feasibility study is its first result. A seminar held in Bishkek on 28 June 2005 marked the beginning of the process of multi-stakeholders' consultations conducted by the Kyrgyz government in order to be better prepared for possible bilateral negotiations. The United Nations Development Programme (UNDP) is already supporting the Kyrgyz Government in its efforts. The World Bank has expressed interest in some form of assistance.

In order to be effective, the preparatory process will need a strong, dedicated leader. The Ministry of Finance, supported by and working closely with the Ministry of Ecology and Emergencies, could provide this leadership.

Some of the major milestones in the preparatory process that the Kyrgyz government may wish to take into consideration are outlined in Table 21 below. As the process unfolds, a more detailed planning and budgeting should be prepared and the planning completed.

Table 21. Major Milestones in the Preparatory Process for Debt-For-Environment Swap

Action	Timing	External Cost (Euro)	Financing
1. Launch a process of official multi-stakeholder national and international consultations, using a pre-feasibility study as a background document.	28 June 2005		OECD
2. Apply for technical assistance to donors or international institutions (e.g. World Bank, OECD, UNDP) for the next steps in the preparatory process.			
3. Make official intervention during the Yerevan Conference of Ministers of Environment and Finance/Economy.	November 2005		OECD
4. Conduct additional analysis (expenditure programmes, institutional issues).			
5. Agree within the Kyrgyz government on the initial position in negotiations with potential creditors.			
6. Launch informal consultations with targeted creditor countries (Germany, France, Russia, Turkey).			
7. Begin formal negotiations with the first creditor(s).	September 2005		
8. Sign first memorandum(s) of understanding with selected creditor(s).			
9. Introduce provision for a debt-for-environment swap into the consolidated balance of financial resources and main directions of budgetary policy established by the Ministry of Finance and the National Bank of the Kyrgyz Republic, as a preparation of the next year's budget.			
10. Prepare feasibility study with business plan, detailed institutional design and investment opportunities analysis.			
11. Sign first swap agreement(s).			
12. Adopt enabling legal and regulatory framework including the charter of financial institution.			
13. Include debt for environment and development swap into the next year's Budget Law.			
14. Establish a financial institution (or other appropriate institutional arrangement), office, equipment, recruit staff.			
15. Train staff, develop detailed project cycle manual, internal operational documents, software and other operational tools.			
16. Start project cycle – first project identification period, information campaign, training for applicants.			
17. First application period.			
18. First appraisal session.			
19. First financing agreements and beginning of implementation of first projects.			
20. First disbursements on projects.			

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7. ANNEXES

ANNEX I: THE KYRGYZ REPUBLIC – MAIN MACROECONOMIC INDICATORS

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Population (1000 inhabitants), end of period	4 525	4 595.9	4 661	4 731.9	4 806.1	4 867.4	4 907.6	4 946.5	4 984.4	5 037.3	---
GDP real growth (annual % change)	-19.8	-5.4	7.1	9.9	2.1	3.7	5.4	5.3	0.0	6.7	7.1
Industrial gross output (% change, real terms)	-23.5	-24.7	3.9	39.7	5.3	-4.3	6.0	5.4	-10.9	17	3.7
Unemployment (% labour force, end-year)	4.1	5.7	7.8	5.7	5.9	7.2	7.5	7.8	6.0	9.0	---
Consumer price index (% annual average)	1 807	143.4	132	123.4	110.5	135.9	118.7	106.9	102.1	103.1	104.1
External debt (end of period; % GDP)	---	51.1	66.6	79.5	90.6	134.4	124.6	109.6	110.7	102.3	95.8
External reserves (million USD)	97.9	113.8	127.5	195.9	188.6	248.8	261.1	285.2	316.7	389	565.2
Current account (million USD)	-84.4	-234.7	-424.7	-138.4	-363.9	-184	-77.6	-26.5	-44.3	-77	-72.2
Current account/GDP (%)	-8	-16	-23	-8	-22	-15	-6	-2	-3	-4	-0.4
Trade balance (million USD)	-86.1	-122	-251.7	-15.2	-220.7	-88.6	4	30.3	-74	-133.5	-112.6
Total government expenditure (excluding net lending) (%GDP)	---	29.7	24.8	25.4	29.3	20.8	25.4	22.8	24.8	24.5	24.5
General government deficit (%GDP), Cash Surplus/deficit including PIP	---	-17.3	-9.5	-9.2	-9.5	-11.9	-9.2	-5.0	-5.4	-5.2	-4.5

Source: National Statistics Committee, National Bank of the Kyrgyz Republic, IMF.
Note: Unemployment rate on survey data, besides officially registered unemployed.
'---' Denotes lack of data.

ANNEX II: 2002 AGREEMENT WITH THE PARIS CLUB ON DEBT RESTRUCTURING

On March 7, 2002 the Kyrgyz Republic agreed with Paris Club creditors on external debt restructuring. This agreement followed the IMF's approval of the Kyrgyz Republic's arrangement under the Poverty Reduction and Growth Facility on December 6, 2001.

The stock of the Kyrgyz Republic's public sector debt was estimated to be US$ 1.5 billion as of the end of 2000. The stock of debt owed to Paris Club creditors was estimated to be US$ 449.7 million as of November 30, 2001. Paris Club creditors' stock of debt was divided into US$ 225.6 million in ODA claims and US$ 224.15 million in non ODA claims.

As in the other agreements with the Paris Club the cut-off date was set for the Kyrgyz Republic at August 31, 2001. The cut-off date is a concept used for the sole internal purpose of the Paris Club agreement. It is defined during negotiations between a debtor country when meeting with Paris Club creditors and is not changed in subsequent Paris Club treatments. Credits granted after the cut-off date are not subject to future rescheduling.

The agreement consolidated roughly US$ 99 million due on loans, credits and consolidations contracted by the Kyrgyz Republic before the cut-off date. This amount consisted of principal and interest falling due from December 6, 2001 up to December 5, 2004. The share of ODA loans was equal to US$ 23 million.

The rescheduling was conducted according to the following terms:

ODA credits were to be repaid over 20 years, with 10 years of grace, at interest rates at least as favorable as the concessional rates applying to those loans;

Commercial credits are to be repaid over 20 years, with 5 years of grace with progressive repayment, at the appropriate market rate;

Moratorium interest on the consolidation is capitalized up to 50% for the first year, 60% for the second year and 70% for the third year.

The agreement was expected to reduce debt service due to Paris Club creditors during 2002, 2003, 2004 from US$ 101 million to US$ 5.6 million, which consists mainly of payments of interest on the rescheduled amounts.

The agreement included a clause allowing each creditor, on a bilateral basis, to undertake debt for nature, debt for aid, debt for equity swaps or other local currency debt swaps.

The Kyrgyz Republic is committed to seeking comparable treatment from its other public and private external creditors.

Creditors agreed in principle to consider a concessional treatment of the stock of the external debt upon successful implementation of the IMF programme and the Paris Club agreement, and approval of an appropriate follow-up medium term arrangement with the IMF.

Table II.1: The Kyrgyz Republic Payments According to the 2002 Paris Club Agreement

	ODA	Non-ODA
December 6, 2008		1.80%
June 6, 2009		1.87%
December 6, 2009		1.95%
June 6, 2010		2.01%
December 6, 2010		2.09%
June 6, 2011		2.19%
December 6, 2011		2.27%
June 6, 2012		2.35%
December 6, 2012		2.45%
June 6, 2013		2.54%
December 6, 2013	5%	2.64%
June 6, 2014	5%	2.75%
December 6, 2014	5%	2.85%
June 6, 2015	5%	2.96%
December 6, 2015	5%	3.08%
June 6, 2016	5%	3.21%
December 6, 2016	5%	3.33%
June 6, 2017	5%	3.47%
December 6, 2017	5%	3.61%
June 6, 2018	5%	3.75%
December 6, 2018	5%	3.90%
June 6, 2019	5%	4.06%
December 6, 2019	5%	4.22%
June 6, 2020	5%	4.39%
December 6, 2020	5%	4.56%
June 6, 2021	5%	4.75%
December 6, 2021	5%	4.93%
June 6, 2022	5%	5.13%
December 6, 2022	5%	5.34%
June 6, 2023	5%	5.55%

Source: Paris Club, Press-Release: The Paris Club and the Kyrgyz Republic Agree to a Debt Restructuring and Agreed Minute on the Consolidation of the Debt of the Kyrgyz Republic, March 7, 2002.

ANNEX III: 2005 AGREEMENT WITH THE PARIS CLUB ON EXTERNAL PUBLIC DEBT REDUCTION

On March 11, 2005 the Kyrgyz Republic agreed with Paris Club creditors on a reduction of its public external debt. The agreement follows the IMF's approval of the Kyrgyz Republic's arrangement under the Poverty Reduction and Growth Facility on February 23, 2005. Paris Club creditors granted a comprehensive debt treatment under the Evian Approach with conditions similar to London terms. The participants agreed that the treatment set forth in Agreed Minutes is sufficient to enable the government of the Kyrgyz Republic to fully service its debt to the participating creditor countries. The government of the Kyrgyz Republic commits not to seek further treatment from the PC once the terms set forth in these Agreed Minutes are implemented.

The stock of debt owed to Paris Club creditors (Turkey included) was estimated to be US$ 555.1 million as of February 1, 2005. Paris Club creditors' stock of debt is divided into US$ 306.3 million in ODA claims and US$ 248.8 million in non ODA claims (source: Paris Club creditors).

The agreement cancels the equivalent of US$ 124 million due on loans and credits contracted by the Kyrgyz Republic before August 31, 2001 (cut-off date) and of debts previously rescheduled in 2002 by the Paris Club. Moreover, it reschedules US$ 431 million. The rescheduling shall be conducted according to the following terms:

Commercial credits are to be cancelled by 50%, the remaining 50% shall be repaid over 23 years of which 7 years of grace at the Appropriate Market Rate. The first payment shall be made on September 1, 2012 and the last one on March 1, 2028. However, the creditor countries have a choice and may apply an option of 100% of debt repayment on commercial credits (option 2 in Table III.1.b below).

ODA credits are to be repaid over 40 years of which 13 years of grace at interest rates at least as favourable as the concessional rates applying to those loans. 100% of the principal on debts shall be repaid in semi-annual instalments, the first one to be made on September 1, 2018 and the last one to be made on March 1, 2045.

To take into account the capacity of payment of the Kyrgyz Republic, moratorium interest due under this agreement shall be capitalized at 85% in 2005, 75% in 2006, 70% in 2007 and 65% in 2008. Those interest amounts shall be repaid over 23 years of which 7 years of grace.

On a voluntary and bilateral basis each creditor may also undertake debt for nature, debt for aid, debt for equity swaps or other local currency debt swaps.

The alternative option is available for creditors that are not in a position to include maturities of non-previously rescheduled debt falling due after March 1, 2005.

Table III.1: Repayment Schedule of Non-ODA Debts According to the 2005 Paris Club Agreement

Table III.I.a

Non ODA Option 1		Non ODA Option 2		
				0
		2006	1	0
				0
		2007	2	0
				0
		2008	3	0
				0.23
		2009	4	0.25
				0.27
		2010	5	0.28
				0.3
		2011	6	0.32
				0.34
		2012	7	0.36
September 1, 2012	0.28			0.38
March 1, 2013	0.38	2013	8	0.41
September 1, 2013	0.48			0.42
March 1, 2014	0.58	2014	9	0.46
September 1, 2014	0.7			0.48
March 1, 2015	0.82	2015	10	0.51
September 1, 2015	0.94			0.54
March 1, 2016	1.08	2016	11	0.57
September 1, 2016	1.22			0.6
March 1, 2017	1.36	2017	12	0.63
September 1, 2017	1.52			0.67
March 1, 2018	1.7	2018	13	0.7
September 1, 2018	1.86			0.74
March 1, 2019	2.06	2019	14	0.78
September 1, 2019	2.26			0.82
March 1, 2020	2.42	2020	15	0.87
September 1, 2020	2.68			0.91
March 1, 2021	2.92	2021	16	0.96
September 1, 2021	3.18			1.01

Table III.I.b

Non ODA Option 1		Non ODA Option 2		
March 1, 2022	3.44	2022	17	1.07
September 1, 2022	3.7			1.12
March 1, 2023	4	2023	18	1.18
September 1, 2023	4.3			1.24
March 1, 2024	4.64	2024	19	1.3
September 1, 2024	4.98			1.37
March 1, 2025	5.34	2025	20	1.44
September 1, 2025	5.72			1.51
March 1, 2026	6.12	2026	21	1.59
September 1, 2026	6.63			1.67
March 1, 2027	7.09	2027	22	1.75
September 1, 2027	7.55			1.84
March 1, 2028	8.05	2028	23	1.93
				2.02
		2029	24	2.12
				2.23
		2030	25	2.34
				2.45
		2031	26	2.57
				2.7
		2032	27	2.83
				2.97
		2033	28	3.12
				3.27
		2034	29	3.43
				3.59
		2035	30	3.77
				3.95
		2036	31	4.14
				4.34
		2037	32	4.55
				4.77
		2038	33	5.01

Source: Paris Club, Press-Release, The Paris Club Reduces the Kyrgyz Republic's Stock of Debt and Agreed Minute on the Consolidation of the Debt of the Kyrgyz Republic (March 10 and 11, 2005).

ANNEX IV: UN DRAFT RESOLUTION: RENDERING ASSISTANCE TO THE POOR MOUNTAIN COUNTRIES TO OVERCOME OBSTACLES IN SOCIO-ECONOMIC AND ECOLOGICAL AREAS

At the 38th meeting, on 7 December 2004, the representative of Kyrgyzstan, on behalf of Albania, Azerbaijan, Belarus, Georgia, Honduras, Kazakhstan, Kyrgyzstan, Nepal, Tajikistan and Turkmenistan, introduced a draft resolution. Subsequently, Afghanistan, Bolivia and Costa Rica joined in sponsoring the draft resolution, which reads as follows:

"The General Assembly,

"*Recalling* its resolution 53/24 of 10 November 1998, by which it proclaimed 2002 the International Year of Mountains,

"*Recalling* also its resolutions 55/189 of 20 December 2000, 57/245 of 20 December 2002 and 58/203 and 58/216 of 23 December 2003,

"*Recalling* also the United Nations Millennium Declaration adopted on 8 September 2000,

"*Recognizing* the socio-economic and ecological challenges often faced by the poor mountain countries, where, for the most part, the territory is located in alpine regions difficult to access,

"*Underlining* the fact that there remain key challenges to implementing socio-economic development and eradicating poverty in mountain regions,

"*Stressing* the need to create international economic conditions reflecting the higher vulnerability of mountain regions,

"*Noting* that the continuing debt and debt-servicing obligations of developing countries, in particular the poor mountain countries, constitute an element that adversely affects their development,

"1. *Recommends* the donor countries and invites the Bretton Woods institutions to take appropriate debt relief measures for poor mountain countries through such actions as debt relief and, as appropriate, debt cancellation;

"2. *Requests* the Secretary-General to submit a report on the implementation of the present resolution to the General Assembly at its sixtieth session."

Source: United Nations, General Assembly, A/59/483/Add.8, 16 December 2004.

ANNEX V: KEY STEPS IN IMPLEMENTING A DEBT-FOR-ENVIRONMENT SWAP

Although there is no single recipe for implementing DFES, some general principles may be relevant. The following steps may be distinguished:

- Raise awareness among fund stakeholders, including government officials and donors, regarding the debt-for-environment swap mechanism and its potential benefits;

Typically, the key ministries are the Ministry of Finance and the Central Bank. It is also possible that some other ministries play an important role i.e. Ministry of Environment. Debt swap proposals are usually submitted to the relevant ministry in a counterpart country, therefore it is crucial that at the very initial stage all decision-makers and technical staff have a good understanding of the mechanism. Hence, donors should be contacted, particularly those who are also creditors and might be in a position to arrange a bilateral swap through a creditor sponsored bilateral debt conversion programme. If the debt is to be purchased with donor funding, it is also possible that a donor will need to authorise use of donor funds in the debt swap.

- Designate a coordinator/manager of the institution and/or Board of Trustees to be responsible for coordinating design and implementation of a debt-for-environment swap at the national level;
- Conduct feasibility research and design the financial structure of a debt-for-environment swap. When an institution has been officially established, the proceeds of a debt swap could be channelled through it;

The objective of the feasibility study is to analyse the financial terms of potential swaps and evaluate related costs and risks. It should also analyse ways that these costs and risks can be reduced. Costs may include: the purchase price of the debt, fees for financial advisors and the administrative cost of preparing the swap. Potential risks may include non-payment of the debt conversion proceeds by the debtor government and erosion of the value of the proceeds through inflation and depreciation of the national currency.

- Raise funds from donors for purchasing debt and/or seek debt donations;
- Submit proposals and negotiate terms for a potential swap with creditors/donors and the Government;

Debt swap can be negotiated by debtor governments either on a case-by-case basis or according to a set of guidelines which define eligible investors and purposes and set priorities.

- Execute "closing" of the debt swap transaction through cancellation of the debt and payment of debt swap proceeds, as detailed in legal agreements signed by parties to the debt swap.

Source: UNDP (1998).

ANNEX VI: EXAMPLES OF DEBT SWAPS WORLD-WIDE

Country	Start Year/ Time Period	Domestic Participants (Governments and Established Funds)	Creditors	Facilitator, Accelerator, Donor	Face Value of Debt Relief (USD)	Available Funds (USD)	Expenditure from Available Funds
Bolivia	1987	Government	n.a.	Conservation International (CI), USAID, Government	0.65 million	0.25 million	n.a.
Bolivia	1992	Government	n.a.	CI, WWF, J.P. Morgan	11.5 million	2.76 million	n.a.
Brazil	1992	n.a.	n.a.	CI	2.2 million	2.2 million	n.a
Bulgaria	1995	National Trust Ecofund (NTEF)	Switzerland	IBRD (or WB)	CFr 23,5 million	started with 7.5 million in 1996.	NTEF agreed to finance and implement 21 projects totalling US$ 36.5 million from which NTEF-contribution would be US$ 6.67 million.
Colombia	n.a.	Government, Ecofondo	n.a.	USAID, CIDA (Canadian International Development Agency), Government, local and international NGOs, TNC (The Nature Conservancy) , WWF-US	n.a.	18 million	34 grants to NGOs totalling USD 1.95 million (1994)
Costa Rica	1988	Government, Central Bank, Banccoop, National Parks Foundation, Natural Resources Conservation Fund	n.a.	CI	n.a.	5.4 million	n.a.
Ecuador	1987	Fundacion Natura of Ecuador	n.a.	WWF	n.a.	n.a.	n.a.
Ghana	1991	n.a.	n.a.	CI	n.a.	1 million	n.a.
Guatemala	1993	n.a.	n.a.	CI	n.a.	1.9 million	n.a.
Madagascar	1990	Government	n.a.	WWF	4.5 million	n.a.	n.a.
Madagascar	1991-1994	n.a.	n.a.	CI, WWF	n.a.	3.48 million	n.a.
Mexico	1991-1996	n.a.	n.a.	CI	n.a.	3.84 million	n.a..
Panama	1992	n.a.	n.a.	CI	30 million	n.a.	n.a

Country	Start Year/ Time Period	Domestic Participants (Governments and Established Funds)	Creditors	Facilitator, Accelerator, Donor	Face Value of Debt Relief (USD)	Available Funds (USD)	Expenditure from Available Funds
Peru	1993-1995	Government, FONCODES (Social and Poverty Fund), PROFONAMPE (Protected Areas Fund), NGOs	Canada, Germany, Finland, Switzerland	NGOs	over 230 million (20-25% of which must be paid for environmental purposes)	50 million	n.a
Philippines	n.a.	Government, Foundation for the Philippine Environment	n.a.	USAID, Bank of Tokyo; WWF, USAID, "Philippine Business for Social Progress", NGOs, academia	n.a.	22 million	157 grants to NGOs and academic institutions totalling USD 3.5 million (1992-1994)
Philippines	1993	Government, Foundation for the Philippine Environment	n.a.	WWF, IBRD/GEF	19 million	17.7 million	n.a
Poland	1990	n.a.	n.a.	WWF	0.05 million	n.a.	n.a. (goal: Mazurian Lake conservation)
Poland	1990	Government	Finland	n.a.	n.a.	n.a.	n.a. (goal: up to 30% grant for import of Finnish environmental protection equipment)
Poland	1992-2010	EcoFund	France, Italy, Norway, Switzerland, Sweden, USA	WWF, Friends of the Earth, other International and Polish NGOs	571 million	571 million	grants (since 2001 also soft loans) for capital investment projects in priority areas: GHG emission reduction (including renewables and energy efficiency), transboundary air emissions, protection of biodiversity and international waters.
Senegal	1993	Government	Argentina	UNICEF	24 million	n.a	Senegal agreed to pay UNICEF the CFA equivalent of USD 11 million over three years to support UNICEF projects

Note: n.a. – Non-applicable.

ANNEX VII. POSSIBLE RATES OF GRANT IN ELIGIBLE PROJECT COST

Table VII.1. below illustrates possible options for the range and type of co-financing provided to different recipients for different types of projects. It is expressed as a share of the grant in the project costs. Eligible costs will need to be defined in the Charter of the institution that will manage the potential DFES resources. The table below serves only to indicate how the rates of the grant can be differentiated and presented. Values are presented for illustrative purposes only.

Table VII.1. Possible Options for the Range and Type of Grant Co-Financing Provided to Different Recipients for Different Type of Projects (As a Share of Eligible Project Cost)

Project Area / Recipient	Biodiversity			Climate Change			Water Resource Protection			Capacity Building		
	I*	II	III	I	II	III	I	II	III	I	II	III
Central Government	0%	75%	75%	0%	50%	75%	0%	50%	75%	0%	75%	85%
Local Authorities	0%	75%	75%	0%	50%	75%	0%	50%	75%	0%	75%	85%
Utilities (e.g. vodokanals, district heating companies)	0%		75%	0%		75%	0%		75%	0%		85%
Budgetary Institutions (e.g. schools, hospitals)	0%	85%	75%	0%	50%	75%	0%	50%	75%	0%	85%	85%
Non-Governmental Organisations	0%	85%	75%	0%	50%	75%	0%	50%	75%	0%	85%	85%
Private Sector	0%	50%	75%	0%	50%	75%	0%	50%	75%	0%	50%	85%
Private Sector: SMEs, small farmers, community groups	25%	50%	75%	25%		75%	25%		75%	25%	50%	85%

** I – potentially commercial; II - cost-recoverable; III - non-commercial.*

ANNEX VIII. GOVERNANCE AND MANAGEMENT STANDARDS OF A FINANCIAL INSTITUTION

The **responsibilities of the governing body (e.g. Governing Board)** should include:

- Approval of second order regulations;
- Defining the strategic plan of the financial institution and general policies and administrative guidelines;
- Approval of an annual operating plan and budget;
- Approval of fundraising policies and any new revenue additions;
- Final approval of the portfolio of projects recommended for funding by the executive director on behalf of the executive management unit;
- Approving project implementation and monitoring reports and annual reports submitted by the executive unit;
- Calling upon external regular audits by independent chartered accountants;
- Regular performance evaluation, appointing and dismissing of the executive director and the members of the executive management unit (upon the proposal by the director);
- Determining the remuneration of the executive management unit.

The two main considerations in designing the governing board are its **membership** and **voting system.**

Governing Board members may consist of persons representing the Kyrgyz government, including the ministries of finance and environment, the parliament, non-governmental organisations, public opinion leaders, scientific institutions, governments of creditor countries that agree to negotiate a swap with the Kyrgyz Republic, and donor countries and organisations that agree to contribute grant financing to the institution. Creditors and donors who make significant contributions to the institution would be represented with voting rights. This will be important for winning the credibility of potential contributors, but international experience also shows that care must be taken that the institution is not excessively driven by creditor/donor interests to the detriment of efficiency and local ownership (IPG, 2000). If any external third party, e.g. international non-governmental institution will be willing to arrange a trilateral swap with the Kyrgyz Republic through the institution, it may be represented in the governing board as well. All members of the Governing Board will be appointed individually for a fixed term (e.g. three years). The framework composition of the governing board and the principles of appointment and dismissal will be set up in a Charter (to allow for the first Governing Board meeting), and specific rules will be laid out in the secondary regulations, adopted by the Governing Board. The Governing Board will meet regularly (e.g. at least two times a year). Non-regular meetings may be called for in special cases.

The **Executive Director and the Executive Management Unit** will be the executive body of the institution, responsible for the management of the daily activities of the institution. Their main responsibilities may include:

- Project cycle management, including project identification, appraisal and selection;
- Preparation of a portfolio of selected projects to be submitted to the governing body for consideration and final approval;
- Conclusion of grant agreements for projects approved by the governing body;
- Disbursement and monitoring of expenditure;
- Ensuring proper and timely completion of projects by grant recipients;

- Preparation of annual reports and evaluation of completed projects.

The executive director should be a strong leader with a high reputation in the country and abroad. She/he should not be a political appointee in the sense that her/his appointment should be linked to personal qualifications, and the security of her/his job should be linked to performance rather than to the changes in the political landscapes in the Kyrgyz Republic. The staff of the executive unit should consist of highly qualified professionals recruited competitively, strictly on a merit basis. They should cover the key expertise needed to achieve the institution's objectives in an efficient way. As the institution develops, the staff should include an accountant, financial analyst, technical officers for each of the priority spending areas and one to two support staff. Legal counselling may be either hired in-house or out-sourced to independent lawyers.

ANNEX IX: PROJECT PIPELINE: BIOGAS PRODUCTION FROM ANIMAL WASTE

Chart IX.1: Relation of Investment Costs and Daily Production of Biogas to the Number of Animals

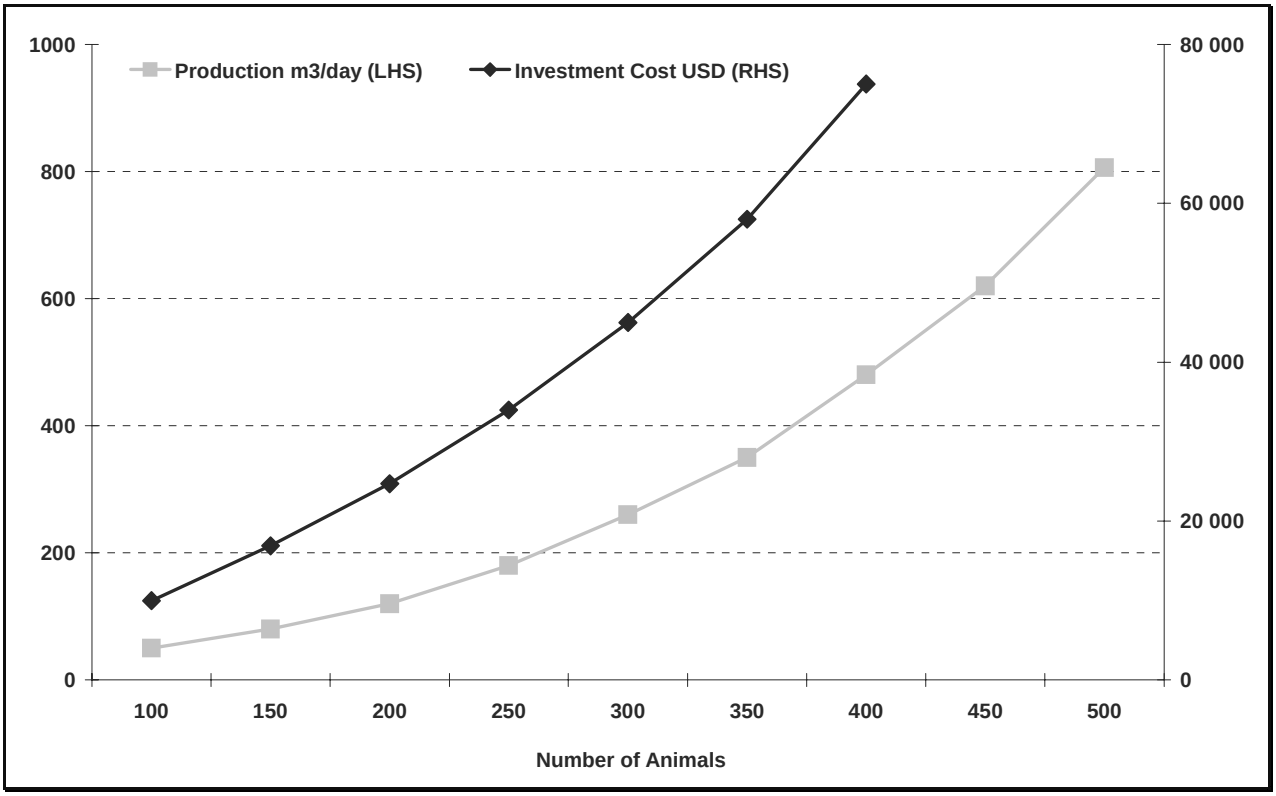
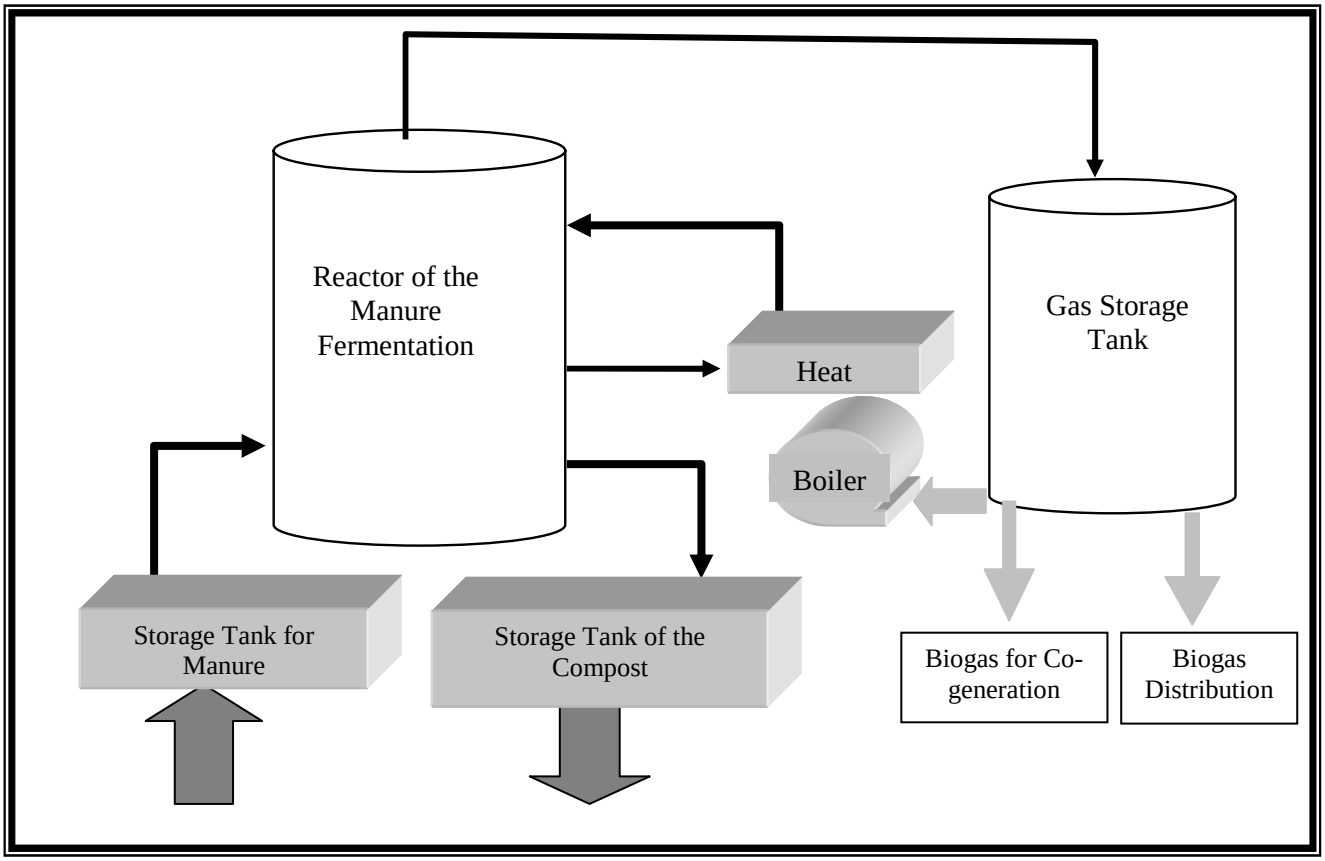


Chart IX.2: Schematic Diagram of Biogas Installation



Picture IX.1. Private Biogas Installation near Bishkek

PICTURE: PRIVATE BIOGAS INSTALLATION NEAR BISHKEK

ANNEX X: LIST OF OFFICIALS/INSTITUTIONS INTERVIEWED

Aidaraliev Asylbek A. – Adviser to the President of the Kyrgyz Republic, Extraordinary and Plenipotentiary Ambassador, Academician of the National Academy of Sciences

Albanova Asel T. – Head of Division for Cooperation with International Financial Organisations, Ministry of Economic Development, Industry and Trade of the Kyrgyz Republic

Apasov Riesbek T. – Deputy Head, Agrarian Policy, Economics, Foreign Relations and Investments Department, Ministry of Agriculture, Water Resources and Processing Industry of the Kyrgyz Republic

Asanbekov Tilek – Chief of State Inspection Activities Administration, Ministry of Ecology and Emergencies of the Kyrgyz Republic

Ashyralieva Aidai – Programme Associate, United Nations Development Programme

Azarbayejani Gholam H. – Coordinator, Regional Public Debt Project for Azerbaijan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan, International Monetary Fund

Azhigaliyev Yerken – Regional Environmental Management Officer, International Fund for Agriculture Development

Baigonchokov Mirlan K. – Head of Public Investment Programme Department, Ministry of Finance of the Kyrgyz Republic

Baihodjoev Muratbek – Advisor to the Prime Minister of the Kyrgyz Republic, Minister Extraordinary and Plenipotentiary

Bakiev Jusupbek S. – Director of the Republican Environmental Fund

Bekkulova Djiparkul – Chief of Ecological Strategy and Policy Department, Ministry of Ecology and Emergencies of the Kyrgyz Republic

Bokonbaev Kulubek J. – President of the “Kyrgyz Ecological Fund” NGO

Borboev Ashirali M. – Head of Environmental Protection and State Ecological Expertise Department, Ministry of Ecology and Emergencies of the Kyrgyz Republic

Burhanov Aitkul – Deputy Chairman of the Chief Forester, State Forestry Service of the Kyrgyz Republic

Chokoev Zair – Head of Foreign Currency Division, National Bank of the Kyrgyz Republic

Cukrowski Jacek – MDG Advisor, Poverty Reduction and Economic Development Practice Policy Support and Programme Development, United Nations Development Programme

Dairov Ysmail – Manager of the Environmental Policy Programme, Regional Environmental Centre for Central Asia

Djangaracheva Mira – Project Manager, United Nations Development Programme

Djoldosheva Dinara – Country Officer, World Bank Office for the Kyrgyz Republic

Domashov Ilia - Coordinator of Sustainable Development Programme - “BIOM” Ecological Movement

Dushebaev Bekbo D. - Deputy Director of the Republican Environmental Fund

Dzokaev Zoldoshbek S.- Director, “Ecology” Tokmok State Enterprise

Edgaro Edward M. – Adviser, Investment Round Table, Public Association

Grisa Ennio – Programme Leader, Kyrgyz-Swiss Forestry Support Programme

Januzakov Kanat Ch. – Deputy Minister, Ministry of Ecology and Emergencies of the Kyrgyz Republic

Kabanova Irina A. – Specialist of the National Statistics Committee of the Kyrgyz Republic

Korotenko Vladimir – Chairman of the “BIOM”Ecological Movement

Li Evgenij A. – Expert of the Comprehensive Development Programme Secretariat, Presidential Administration of the Kyrgyz Republic

Mamatbekov Bekbo D. – Deputy Director, Government of the Kyrgyz Republic, State Energy Agency

Obozov Alaibek – Director of the Center of the Problems of Renewable Energy Application

Rustembekov Omor – Director of the Department of Ecology and Nature Management, Ministry of Ecology and Emergencies of the Kyrgyz Republic

Sato Shinsuke – Environmental Science & Engineering Department, Overseas Consulting Administration

Satybekov Bakytbek E. – Deputy Director of Public Debt Department, Head of the Public Debt Management Division, Ministry of Finance of the Kyrgyz Republic

Schafernaker Andrzej – Country Director, USAID Enterprise Development Project, Competitive Advantage for Central Asia

Skuratowicz Jerzy – United Nations Resident Coordinator

Sultankulova Aigul – Head of the Legal and Investment Programmes Department, State Energy Agency of the Kyrgyz Republic

Surappaeva Venera – Head, Department of Monitoring and International Cooperation, State Forestry Service of the Kyrgyz Republic

Takenov Zharas – International Senior Programme Officer on Environment, United Nations Development Programme

Tashybekov Turuzbek A. – Deputy Chairman, National Center for Mountain Regions Development of the Kyrgyz Republic

ANNEX XI: PROJECT'S STEERING COMMITTEE MEMBERS

	NAME	*POSITION*
1	**Kanat Chynybaevich DZHANUZAKOV**	First Deputy Minister of Ecology and Emergencies, Co-Chairman
2	**Emirlan Toromyrzaevich TOROMYRZAEV**	First Deputy Minister of Finance, Co-Chairman (or a nominated representative)
Members of the Steering Committee		
3	**Talantbek Choyubekovich KUSHCHUBEKOV**	First Deputy Minister of Foreign Affairs (or a nominated representative)
4	**Sabyrbek Aydarkanovich MOLDOKULOV**	First Deputy Minister of Economic Development, Industry and Trade (or a nominated representative)
5	**Barataly Turanovich KOSHMATOV**	Deputy Minister of Agriculture, Water and Processing Industry (or a nominated representative)
6	**Aytkul Mustafaevich BURHANOV**	Deputy Chairman of the State Forestry Service (or a nominated representative)
7	**Bekbo Dzhumadylovich MAMATBEKOV**	Deputy Head of the State Energy Agency (or a nominated representative)
8	**Asylbek Akmatbekovich AYDARALIEV**	Head of the National Centre of Development of Mountain Regions under the President of the Kyrgyz Republic, Member of the National Academy of Science of the Kyrgyz Republic (or a nominated representative)
9	**Nelly PETKOVA**	Project Manager, EAP Task Force, Non-Member Countries Division, Environment Directorate, OECD

ANNEX XII: GLOSSARY OF MAJOR TERMS

Additionality: New investment generated through debt conversion. Debt-equity swaps can be used to promote foreign investment in priority sectors of the economy and to stimulate privatisation or non-traditional exports. Debt-for-aid/environment swaps can attract additional donor assistance.

Agreed Minute: Participating creditor countries and the debtor country usually sign an Agreed Minute at the end of a negotiation Paris Club session. This is not a legally binding document, but a recommendation by the heads of delegations of Participating creditor countries to their governments to sign a bilateral agreement implementing the debt treatment. When there are only a few creditors concerned, the Paris Club agreement is exchanged through mail between the Chair of the Paris Club and the government of the debtor country, and is called "terms of reference". In some cases, the multilateral debt agreement has also been called "memorandum of understanding".

Bilateral (Official) Debt: Loans owed to bilateral creditor governments. Official Development Assistance (ODA) loans are typically owed to aid agencies. Publicly guaranteed loans (mostly export credits) are owed to export credit agencies (ECAs).

Charter: A legal document similar to Articles of Incorporation or a Deed of Trust, but used specifically in the case of an entity which is established by an act of the country's legislation or an executive decree of its President, King, etc. (as opposed to an entity which is set up solely by private individuals or groups in civil society).

Commercial Credits: (i) Credits granted by a bank or a supplier to a debtor country for importing goods and services. When these credits are guaranteed by the appropriate institution of a Paris Club creditor, they are included in the claims treated in the context of the Paris Club. (ii) Non-ODA credits are sometimes referred to as commercial credits.

Concessional Debt: Applies to any credit whose grant element is higher than 25%. The grant element reflects the credit terms of a credit operation: interest rate, the maturity and grace period. The grant element of a loan is measured by giving the loan a present value on the basis of an actualisation rate, conventionally fixed by the OECD at 10% for the whole period of the loan.

Consolidation: Change of the terms of debt payment obligations. This can be implemented either though a change of the terms of the existing debt ("rescheduling"), or through the exchange of the debt for a new instrument (notably, through "refinancing").

Contingent Liabilities: Contingent liabilities are obligations that have been entered into, but the timing and amount of which are contingent on the occurrence of some uncertain future event. They are therefore not yet actual liabilities, and may never be if the specific contingency does not materialise.

Cut-off Date: When a debtor country first meets with Paris Club creditors, the "cut-off date" is defined and is not changed in subsequent Paris Club treatments and credits granted after this cut-off date are not subject to future rescheduling. Thus, the cut-off date helps restore access to credit for debtor countries facing payment difficulties.

Debt-for-Aid/Development Swap: The cancellation of external debt in exchange for funding for development projects (child development, education, health, conservation/environment, etc.) in the debtor country. Also often called debt-for-development.

Debt-for-Equity Swap: The cancellation of external debt in exchange for equity investment in a domestic company or privatised public enterprise.

Debt-for-Nature (Environment) Swap: The cancellation of external debt in exchange for local currency that is used to finance conservation or environmental protection projects.

Debt Reduction, DR: In the context of a concessional treatment, creditors may usually choose among a number of options to provide the required debt reduction in net present value. When the creditor chooses the "DR" option, the net present value reduction is achieved through a cancellation of part of the claims.

Debt Swap (Conversion, Exchange): The cancellation of external debt, typically at a discount from face value, in exchange for payment in local currency or another asset (bonds, privatised public assets, etc.). The terms "conversion", "exchange" and "swap" are used interchangeably.

Discount from Face Value: Percentage of reduction from the face value of debt. The inverse of the discount is the purchase price or the redemption price. Also referred to in colloquial terms as the "haircut".

Domestic Debt: Debt owed to residents of the country concerned.

Eligible Debt: Debt that may be treated in the context of a Paris Club agreement.

Endowment Fund: A fund which invests its capital and uses only the income from those investments to finance its activities.

Emerging Markets Debt Market: Also called the secondary debt market for trading of commercial debt owed by developing country governments. Emerging markets refers to low-and middle-income countries that are pursuing political and economic reforms and a more complete integration into the global economy.

Exit Rescheduling: An exit treatment is the last rescheduling a country normally gets from the Paris Club. The aim is that the debtor country will not need any further rescheduling and will thus not come back for negotiation to the Paris Club.

Face Value: The original amount of loans owed under a loan or other credit agreement, prior to debt rescheduling or reduction. Also referred to as the nominal value of debt.

Flow Treatment: A standard Paris Club agreement provides a way of tiding a debtor country through temporary balance of payments difficulties during a given period of time. This is referred to as a flow treatment, as opposed to a stock treatment.

Foreign Debt (= External Debt): Debt owed to non-residents of the country concerned.

Goodwill Clause: Clause by which Paris Club creditors agree to consider further debt relief for a borrower’s debt servicing obligation falling due after the expiration of the consolidation period under a previous rescheduling agreement. The willingness is conditional upon the complete implemenmtation of all previous bilateral agreements as well as the debtor’s continuation of its arrangement with the IMF.

Heavily Indebted Poor Countries (HIPC) Debt Initiative: Launched in 1996, the HIPC initiative is an agreement by the international community to help poor countries with good policy performance to escape from unsustainable debt burdens by providing comprehensive debt relief. The enhanced HIPC framework, agreed in 1999, lowers the qualifying criteria, speeds up the delivery process and creates an explicit link to poverty reduction. About 36 countries are HIPC eligible, mostly in sub-Saharan Africa.

Inflationary Effect: A side effect produced by the release of large amounts of currency into the local financial market. If the amount of money increases in a country, people have an easier or cheaper access to money and therefore tend to buy more (increased demand). If the demand for goods and services increases, prices increase, if prices increase, salaries tend to go up, if salaries go up, prices follow, etc. and this generates inflation.

Internal Rate of Return (IRR): The discount rate which would give a zero net present value for the investment.

Moral Hazard: The possibility that the signal or expectation of possible future government support may induce an undesirable change in behaviour by management of an enterprise or bank, for example by engaging in more risky activities because some of the potential losses are seen as being effectively underwritten by the government.

Multilateral Debt: Debt owed to multilateral organizations, such as the World Bank, regional development banks, and other multilateral and intergovernmental agencies. Excluded are loans from funds administered by an international organisation on behalf of a single donor government (these are classified as loans from governments).

Net Present Value (NPV): The net present value (NPV) of debt is a measure that takes into account the degree of concessionality. It is defined as the sum of all future debt-service obligations (interest and principal) on existing debt, discounted at the appropriate market rate. Whenever the interest rate on a loan is lower than the market rate, the resulting NPV of debt is smaller than its face value.

Non-Paris Club Creditors: Debt owed to bilateral creditors that are not members of the Paris Club of creditors.

ODA Credits: "Official Development Assistance" ("ODA") credits are defined by the OECD as credits with a low interest rate and aimed at development.

Official Creditor: This covers a) official bilateral creditors (governments or their appropriate institutions), including Paris Club members; b) multilateral creditors (international institutions such as the IMF, the World Bank or regional development banks).

Paris Club: The Paris Club is an ad hoc group of official bilateral creditors that meet once a month to negotiate rescheduling agreements with debtor countries. The French Treasury serves as the Secretariat for the Paris Club.

Participating Creditor Countries: The creditor countries that sign an Agreed Minute. They are members of the Paris Club or other official creditors.

Primary Balance: The overall balance excluding interest payments.

Purchase Price: The price in percentage terms paid to purchase debt from a creditor. The purchase price is the inverse of the discount from face value.

Redemption Price (Rate): The price in percentage terms at which debt is converted into another asset.

Refinancing: Creditor countries may choose to apply the terms of a Paris Club agreement either through a refinancing (they make a new loan that is used to repay the existing debt) or though a change of the terms and conditions of the existing debt (rescheduling).

Rescheduling: (i) Consolidation, change of the terms of debt payment obligations; (ii) when opposed to concessional treatment, non-concessional consolidation; (iii) when opposed to deferral or reprofiling, the part of a consolidation with the longer terms of repayment (iv) when opposed to refinancing, consolidation through a change of the terms and conditions of the existing debt.

Revolving Fund: A fund that provides for the receipt of new resources on a regular basis – such as proceeds of special taxes designed to pay for conservation programmes – which can replenish or augment the original capital of the fund and provide a continuing source of money for specific activities.

Round-Tripping: Re-conversion of local currency debt conversion proceeds into hard currency for illegal gain. By converting a debt, you help the indebted country to save hard currency. But if you change the debt conversion proceeds that you have received in local currency back into hard currency, the initial beneficial effects of the debt conversion on a country's balance of payments disappears. You have made a "round trip".

Secondary Debt Market: A market for trading discounted developing country debt instruments owed to commercial creditors. Also called the emerging markets debt market.

Sinking Fund: A fund that disburses its entire principal and investment income over a fairly long fixed period, e.g., 10 years or more.

Stock Treatment: As opposed to standard flow treatments, some Paris Club treatments apply not only to the payments falling due in a particular period of time, but to the whole stock of debt from which those payments fall due. The intention of any agreement which deals with the stock of debt in this way is to provide a country with a final treatment by the Paris Club called an exit rescheduling.

Sovereign Debt: Debt owed by governments or by publicly owned agencies.

Three-Party Debt Swap: Debt conversions involving negotiations between a debtor government, an investor and a creditor.

Trust Fund (also referred to as a "trust"): A legal structure by which money or other property is held, invested, and spent by a board of trustees or board of directors exclusively for a specific charitable purpose, as defined in a charter or deed of trust. Note: In common law countries, trust funds can also be established for specific individual beneficiaries, and be administered by an individual trustee, rather than by a board of trustees. A trust fund in this general sense can take one of several different legal forms, depending on the legal system of the country involved.