Document of
The World Bank

Report No:

PROJECT BRIEF

ON A

PROPOSED LOAN

IN THE AMOUNT OF USD 30 MILLION

AND

PROPOSED GRANT FROM THE
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF USD 5 MILLION

TO THE

GOVERNMENT OF KAZAKHSTAN

FOR A

FOREST PROTECTION AND REFORESTATION PROJECT

{ March 15, 2005}

CURRENCY EQUIVALENTS
(Exchange Rate Effective {Date})

Currency Unit	=	Tenge (KZT)
KZT 130	=	US$1
US$xxx	=	SDR 1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ARPF	Access Restriction Process Framework
ADB	Asia Development Bank
BP	Bank Procedure
CAS	Country Assistance Strategy
CBD	Convention on Biological Diversity
CIS	Commonwealth of Independent States (former Soviet Union)
CPS	Country Partnership Strategy
COP	Conference of Parties
CQ	Selection Based on Consultant's Qualifications
DAS	Dry Aral Seabed
EA	Environmental Assessment
ECA	Europe and Central Asia
EMP	Environmental Management Plan
EU-TACIS	European Union Technical Assistance Cooperation
FAO	Food and Agriculture Organization
FEF	Front end fee
FHC	Forest and Hunting Committee
FM	Financial Management
FMIS	Forest Management Information System
FMR	Financial Management Report
GEF	Global Environment Facility
GIS	Geographic Information Systems
GP	Good Practice
GOK	Government of Kazakhstan
GP	General Policies
GTZ	German Technical Cooperation
ha	hectare
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
ICR	Implementation Completion Report
ISA	International Standards on Accounting
ISDS	Integrated Safeguard Data Sheet
m	Million
MTR	Mid term Review
NCB	National Competitive Bidding
NAP	National Action Plan
NEAP	National Environmental Action Plan
NGO	Non governmental Organization
NRM	Natural Resource Management
OMS	Operational Manual Statement
OP	Operational Policy
Orman	Kazakh for "forest"; a state-administered forest area
Ormandar	Plural of orman
PAC	Project Advisory Committee
PAD	Project Appraisal Document
PCD	Project Concept Document
PCU	Project Coordination Unit
PHRD	Policy and Human Resources Development (Japanese)
PIC	Project Information Center
PID	Project Information Document
PIP	Project Implementation Plan
QCBS	Quality and Cost Based Selection
RPO	Regional Project Office
SA	Special Account
SBD	Standard Bidding Documents
SFE	State Forest Entity
SOE	Statement of Expenditure
TBD	To be determined
TOR	Terms of Reference
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USAID	United States Agency for International Development

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KAZAKHSTAN
Forest Protection and Reforestation Project

CONTENTS

A. STRATEGIC CONTEXT AND RATIONALE

1. Country and sector issues

Kazakhstan's forests and rangelands are important. Kazakhstan possesses a significant forest resource, with 11.5 million(m) hectares (ha) of forested land, of which 5.3 m ha are saxaul woodlands and associated rangelands. Kazakhstan's forests and wooded rangelands play an important role, providing key environmental and economic services. They are a key factor in soil and sand retention the face of the country's strong winds, protect watersheds, and reduce siltation of waterways and reservoirs. They also have been a driving force in the country's economy as a source of fodder, food, fuel, medicinal plants, and recreation. About 300,000 people are directly dependent on the forest sector, while an estimated 2.5 million live in or rely on the forests for fuel wood, fodder and other forest products.

Legacy of land degradation. Kazakhstan inherited some of the greatest environmental problems of the post-Soviet republics. Unsustainable conversion of fragile rangelands to agricultural use, and other ecologically risky land use for rainfed and irrigated crop production, livestock production, oil drilling, the space program, and nuclear testing has destroyed valuable land. As a result of these policies and actions large areas have become wasteland. For example, as of 2004, there were over 4 million ha of dry Aral seabed, of which some 2.6 million ha was within Kazakhstan.

Kazakhstan's forest lands and rangelands continue under threat. The generally dry extracontinental climate of Kazakhstan makes the existing forest and rangeland ecosystems particularly susceptible to various threats, including:

- fires (natural and anthropogenic, including agricultural fires)
- pest infestations that often follow fires
- overgrazing
- over-harvesting through illegal and 'sanitary' cutting, and through increased subsistence cutting for fuelwood
- habitat degradation from excessive hunting/tourism development
- desertification

The recent years of political and economic transformation has increased these problems. For example, Kazakhstan's forests suffered dramatic losses from fire in 1997, affecting as much as 2% of the forest area.

Tenure of Forest Lands and Industries. Since its inclusion in the Soviet Union, forestlands in Kazakhstan have been, and continue to be, owned by the state. A national debate about land management in 2001 and 2002 has more or less reached consensus that private owners can hold arable land, but that forest lands remain in the domain of the State. Saxaul rangelands, however, may be leased. In contrast to forest lands, the wood-based processing was privatized and has mostly collapsed.

Forestry Agencies. The Forestry and Hunting Committee (FHC) and the Oblast Akimat Forest Divisions, with offices in Astana, the 14 oblasts and at the 138 district-level entities are managing almost all Kazakh forests and protected areas, as well as the dry Aral Seabed and the saxaul rangelands. Their combined total staff is about 7,000 staff, down from 25,000 staff in 1990. The FHC also includes several technical institutes to address requirements such as inventory and planning, research, genetic stock selection, forest-related aviation, and Astana afforestation. Most of afforestation and forest inventory and protection activities came to a virtual standstill by the end of the 1990s. As enforcement of forest regulations and local job opportunities diminished, illegal logging increased. In the late 1990's, the forest agencies went through several reorganizations that sought separation of management and

oversight functions. In 2003 Forest Code delegated most forest management functions from the central FHC to oblast governments, but the decentralized functions are not operating at agreed levels due to a shortage of oblast government funds, and the lower priority that oblasts attach to forest preservation compared to water resource management, and pollution management. With the recent fiscal recovery due to oil revenues and the high priority that the national government gives to restoring forest cover, national public funding for management of forest lands, especially in national reserves where FHC still has direct implementation responsibilities. However the sector suffers from a major human resource drain, and there is a lack of new required skills (extension, marketing, public participation). Inadequate information facilities and flow, and rigid top-down administrative management styles also limit organizational effectiveness.

Forest and Rangeland Studies. In 2002, joint World Bank and Kazakhstani studies on forests and rangelands recommended that the government develop and adopt a new a strategy to reflect change of paradigm with more rights and responsibility to local decision-making, with emphasis on phased implementation and allowing management objectives and systems to differ by region. The study suggested that investments in improved public forest management should cover the following areas:

- Substantial upgrades in the national and local capacity for fire and pest protection
- Rapid inventory of forest resource base, using landscape-ecological approach, preparing broad functional zoning of forest areas with adequate public participation
- Substantial upgrades in the local capacity for reforestation and afforestation
- Training for central and local forestry staff, especially in – economic analysis, marketing policies, extension, public and community participation.

2. Rationale for Bank involvement

Value Added of World Bank. The Bank has been working in forest management in transition countries since 1992, with activities underway in eleven countries. Based on work in these countries and elsewhere, the Bank has gained considerable experience in forest governance and forest management reform issues, and is using this experience in the dialogue with Government and in helping them to develop the concept for this intervention. Within Kazakhstan, the Bank has collaborated on technical studies of forest policies and investment programs and also helped the Government to review the forest code. The project takes into account and builds upon the experience of other Bank-financed projects including the Syr Darya Control and the Northern Aral Sea Phase I, as well as several Global Environment Facility (GEF) projects for which the Bank is responsible. During project implementation, the Bank will be able to further transfer up-to-date practical experience. The Bank is also in a position to ensure that improved technology and other knowledge could be made available in a timely manner, through its linkages with international forestry research organizations and its network with other donors funding forestry operations. The project responds to a government request dated October 2001. In a June 2003 letter, the government explicitly endorsed the project concept which had been developed with their collaboration, and during discussions at that time, expressed a desire that the project include provision for financing by GEF.

3. Higher level objectives to which the project contributes

Borrower's Plans and Strategies. The Government has been revisiting its environmental and natural resource management policies. It initiated the preparation of the *National Environmental Action Plan* (NEAP) for the republic in 1997, with assistance of the World Bank, UNDP, and EU-TACIS. The NEAP has identified seven key priorities problems that

include, among others, degradation of pastures and arable lands (most acutely manifested in the south) and lack of forests and protected areas as natural habitats (particularly important in the northeast. On the topic of sustainable land management, Kazakhstan developed a *National Action Plan* (NAP) in 1997 under the United Nations Convention to Combat Desertification (UNCCD), which emphasizes environmental zoning, monitoring, improvement of nature protection, and rationalization of the natural resource use. It has refined and updated that plan in the form of an updated draft NAP which is under discussion by government agencies. This updated NAP specifies main zones of ecological stress and land degradation (including in and around the dry Aral seabed and the Irtysh River) and the main types of degradation (including windblown soil erosion, soil salinization, and forest destruction). The project is also consistent with the action plan for conservation and sustainable use of forest ecosystems in the national *Strategy and Action Plan on Conservation and Sustainable Use of Biodiversity Conservation* (1999).

Bank Country Assistance Strategy. The project is consistent with and specifically highlighted by the Bank's 2004 Country Partnership Strategy (CPS). It is most relevant to the fourth CPS pillar: ensuring that future growth will not harm the environment and that past liabilities are mitigated. It is also relevant to other pillars in that it will address increased public efficiency, build a supportive role of the state for private sector development, and strengthen human resources.

Relevance to Global Environment Facility (GEF) Priorities. The project is highly relevant to the GEF focal area of land degradation, and also has some relevance to other GEF focal areas. The project would not address Kazakhstan's entire land degradation agenda; rather focus on addressing key land degradation issues in forest lands under the jurisdiction of the FHC and its subsidiary organizations. In the Kazakhstan context, addressing land degradation and maintaining and/or restoring associated ecosystem integrity and services is the priority forest management agenda, although timber, other economic products, and carbon sequestration are important, albeit secondary considerations. Other GEF focal areas relevant to the project development objective would include climate change, and ecosystem biodiversity in forests and semi-arid zones.

Sustainable Land Management. Kazakhstan ratified the United Nations Convention to Combat Desertification (UNCCD) on July 7, 1997. The Project is consistent with the Operational Program on Sustainable Land Management (OP#15). The biological and climatic impacts would be globally significant. The project would address deforestation, with a focus on two indigenous tree species which are uniquely adapted to Kazakhstan's harsh climatic conditions and are vital to Kazakhstan's desertification control: Irtysh pine and saxaul. It also would address underlying causes of future land degradation through strategic interventions (e.g., changes in incentives, new technologies, planning systems etc.) that integrate economic, environmental and social considerations. . In some areas, it would also help to shelter lands from wind erosion and thereby improve air quality and dune control.

B. PROJECT DESCRIPTION

1. Lending instrument

The specific investment project will be financed by an IBRD loan of about US$ 30 million, a GEF grant of about US$ 5 million, and government counterpart financing of about US$ 29 million.

2. [If Applicable] Program objective and Phases

The program objective is to have a significant portion of forest lands and associated rangelands rehabilitated and well managed by 2025. Land degradation (specifically, deterioration or lack of tree cover or other vegetative cover) would be prevented, reduced or ameilorated. More specifically by 2025

- 180,000 ha burned or deforested area of Irtysh pine forests would be replanted and all 650,000 ha good condition
- 800,000 ha of the dry Aral seabed would be covered with vegetation (through planting and natural spread), out of the current total 2.6 mln ha
- Effective interventions underway to maintain public saxaul rangelands in good condition

Organizational and procedural arrangements facilitating sustainable and cost-effective results would also be applied to the management other forest lands and other public expenditure investment programs.

3. Project development objective and key indicators

Project objective. The project objective is to develop and initiate ways of cost effective and sustainable environmental rehabilitation and management of forest lands and associated rangelands, with a focus on the Irtysh pine forest, the dry Aral Seabed, and saxaul rangelands. The development objective is both local and global in nature.

Outcome indicators. The key outcome indicators will comprise

- Land degradation (specifically, deterioration or lack of tree cover or other vegetative cover) prevented, reduced or ameliorated in
    - Irtysh pine forest, including 41,000 ha of rehabilitated forest and reversal of fire and other degradation trends on the entire 642,000 ha area
    - Dry Aral Seabed, with more than 150,000 ha of current total 2.6 mln ha dry seabed area within Kazakhstan covered by vegetation (from pre-project coverage, project planting, and natural spread)
    - Saxaul and adjoining rangelands covering more than 156,000 ha with sustainable resource-led grazing management
- Capacity and decisions to upscale investment programs for forest lands based improved knowledge of performance, costs, and impacts as demonstrated by decision to scale up post project investment program in Irtysh pine forests and Kzyl Orda and apply experience from competitive grants
- Number of people benefiting through employment
- Improved knowledge of natural resource dynamics and management and capacity for cost effective and results oriented public expenditure on forest lands
- Project reputation for integrity, and public support for improved forest and associated rangeland management, as reflected in public opinion surveys and government budget

4. Project components

Project costs total about US$63.8 m over six years, including a GEF grant of US$5 m. Project activities comprise:

Component I: Irtysh Pine Forest (US$41.2 m including contingencies, with a GEF contribution of US$0.4 m)

- ***Component IA: Reforestation US$ 24.2 m).*** Improved reforestation of 41,000 ha (20,000 ha with seedlings and if feasible, 21,000 ha directly seeded) through re-

establishment of seed production areas, applied research on cost-effective nursery, planting and direct seeding technologies (e.g, greenhouses, containers, seed pelleting). Flexible, performance based budgeting and contracting will be used. The combination of new technologies and other practices aims to reduce the costs of replanting by at least 20%, and increase the survival rate from 60% to 85%.

- ***Component IB Improved Fire Management and Other Forestry Support (US$15.6 m).*** Development and implementation of improved forest fire management of the 642,000 ha through: (i) information, consultation, and training support to further strengthen the fire management strategy, (ii) improved facilities for fire prevention and detection, including lookout towers, communications equipment and rejuvenation of the firebreak network, and (iii) improved facilities for fire suppression including road rehabilitation, fire station equipment, and fast-attack vehicles. This subcomponent would also provide other forestry support including a program of thinning and cleaning that would overcome a 15-year backlog, vehicles for more effective patrolling to reduce illegal activities, and capacity building in integrated pest management
- ***Component ID Forest Partnership Development (US$1.4 m):*** The project will explore the feasibility fostering forest partnerships benefiting local people by fostering environmentally sustainable forest-based enterprises and also by testing a participatory forest management (PFM) in a few villages. Through PFM local people would obtain rights to a share of forest products in exchange for undertaking specific protection and/or management responsibilities, and with a provision for the development of livelihoods alternatives.

Component II: Environmental Amelioration in Kyzyl Orda (US$10.7 m including contingencies, with a GEF contribution of US$3.2 million)

- ***Component IIA Planting on the Dry Aral Seabed (US$8.1 m).*** Accelerating the expansion of vegetative cover by planting 79,000 ha (44,000 with seedlings and if feasible, 35,000 directly seeded) using cost-effective nursery and planting technologies and developing cost-effective direct seeding techniques. Flexible, performance based budgeting and contracting will be used. The combination of new technologies and other practices aims to reduce the costs of planting by at least 20%.
- ***Component IIB Improvement of Management of Saxaul Rangelands (US$2.6 m).*** Thirty demonstration of a participatory saxaul rangelands program with each demonstration rehabilitating approximately 200 ha, and increasing access to water for grazing animals on an additional area of about 7500 ha . This would include herder agreements to enable restoration and development of degraded saxaul rangelands, community management of grazing pressure, and provision of water resources for associated rangelands.

Component III: Capacity Building of National Institutions (US$11.9 m including contingencies, with a GEF contribution of US$ 1.4 m)

- ***Component IIIA Improvements in Policy, Information, and Human Resource Capacity (US$6.5 m).*** Improvements in policy and public expenditure analysis, information facilities, human resource development, and organizational management leading to improved policy and budget decisions, public consultation, inventory, planning, monitoring, staff knowledge and skills, and organizational effectiveness. This subcomponent also includes preparation support for follow-on projects.
- ***Component IIIB Competitive Grant Program (US$ 2.6 m).*** Competitive grant fund for innovative forest development subprojects (e.g. timber usufruct sharing or other measures to address illegal logging incentives, ecotourism, value addition processing of birch, community involvement in reforestation or environmental education, private plantations, tungai floodplain protection, etc.)

- ***Component IIIC. Project Coordination and Management (US$ 2.8 m).*** Project administration and management.

The US$ 5 m in GEF financing enables the project to increase the scope of international cooperation, capacity development, and monitoring across all of the above components. Further, it will permit the project to adapt participatory natural resource management approaches to steppe forest areas in Kazakhstan, significantly accelerate vegetation of the DAS, expand the scope of sustainable management demonstrations on the saxaul rangelands and undertake additional subprojects for innovative forest management activities through the competitive grants program.

5. Lessons learned and reflected in the project design

Lessons learned and reflected in project design include:

(a) *Institutional reform.* Based on world-wide experience, the transition from a hierarchical command and control forest management system to a decentralized system based on collaboration with local people and public expenditure accountability is facilitated by
  - o a flexible legal and institutional framework with space for interactive reform based on operational experience and evolving capacities.
  - o carefully designed, extensive human resource development and reform of human resource management systems in role realignment, and new attitudes, behaviors, and skills
  - o an incentive structure which promotes decision making based on maximizing marginal returns, taking into consideration environmental and social externalities
  - o learning by doing with a phase where mainly pilots are implemented in order to learn lessons that are mainstreamed into a second phase of the project, and
  - o inclusion of the scaling up phase within the same project to ensure adequate government commitment and attention from the onset.

(b) *Project scope.* Experience in Kazakhstan and other Former Soviet Union countries shows that projects should be focused on a few main components, taking into consideration existing capacity levels for new institutional approaches, and deterioration in skill levels of government staff due to underfunding.

(c) *Social issues.* Carefully designed and well functioning strategies are needed for communicating with stakeholders, managing stakeholder involvement, ensuring social inclusion, improving conflict management, monitoring social impacts, and adjusting methodologies based on feedback in order to ensure strong ownership and sustained support.

6. Alternatives considered and reasons for rejection

Several alternatives were considered:

- a nation-wide project covering field-level activities in all the forests of Kazakhstan. This was rejected because (a) the capacity constraints to undertake nationwide field activities under a reformed paradigm would raise risks to unacceptable levels, (b) the intensive learning in two project sites should provide lessons applicable to other areas at a later date, (c) the two main project areas are high priority facing urgent issues where projects could provide significant potential benefits and they are not supported under other donor-funded projects (e.g. Tien Shen), (d) the two sites reflect Kazakhstan's two main ethnic groups -- with ethnic Russians predominating in the northeast and ethnic Kazakhs predominating in the south, (e) addressing illegal logging would have higher prospects for success in the Irtysh pine forest areas, yet still provide useful experience and lessons for

the more challenging situation in East Kazakhstan's Altai Mountains, where the stakes are higher, and (f) the area focus was responsive to Government views.

- Separating the components into two or three separate, simpler projects. This was rejected because the Government felt dividing the project would complicate project processing, increase costs, and risk further delays.
- A project focused primarily on replication of existing methodologies, with little attention finding improved ways to address the scope of the overall land degradation situation, or to institutional reforms. This was rejected because it would be expensive and slow, and thus not be readily replicable on a large scale in a way that could make a significant contribution to an efficient and sustainable resolution of Kazakhstan's land degradation problems over the long-term.

C. IMPLEMENTATION

1. Partnership arrangements (if applicable)

The project would work in partnership with German Technical Cooperation (GTZ) on the vegetation of the dry Aral seabed. GTZ plans to support technical cooperation activities of vegetation of the dry Aral Seabed in both Kazakhstan and Uzbekistan in 2005 and 2006. Because GTZ can carry out operations directly without having to wait for Government budgetary cycles, its support may enable the supply of seedlings for the dry Aral Seabed and the participatory saxaul rangelands activities during the initial year or two of the Bank-financed project. The project also will continue to take into account ongoing work supported by FAO on the regulatory framework and on long-term programs for forestry. The Bank-financed project will also continue to liaise with the Kazakhstan working group on the UNCCD, and with donors, such as the United Nations Development Programme (UNDP), the Asian Development Bank (ADB), and GTZ, which are addressing other land degradation issues in Central Asia.

2. Institutional and implementation arrangements

Implementation. Many of the project activities will be implemented either directly by the FHC itself. The Semey and Irtysh special reserves (Ormandar), which are are direct subsidiaries of the FHC, would undertake most the Irtsyh pine component. FHC would undertake others would through non-competitive contracts with State Forest Entities (SFEs, or in other words, the former leskhozy), research institutes, or through competitive contracts, depending on the specific activity. Participatory forest management and participatory rangeland management activities would require specially negotiated arrangements with local people. A Project Coordination Unit (PCU) and the Regional Project Offices will provide administrative support for all project activities. A Project Advisory Committee (PAC) will assist FHC in strategic planning and review.

- The FHC special reserves will manage the most of the Irtysh component. There will be increasing emphasis on the use of external contractors for reforestation and fire management works, with oversight provided by the reserves. The reserves will also directly acquire improved firefighting and fire prevention facilities. The Irtysh component will also include contracted consultant studies, and contracted teams and specialists supporting the PFM and other forest partnership development activities.
- On the dry Aral seabed, the initial nursery and field establishment program will be implemented by two SFEs, under contracts with FHC. As the program develops, other SFEs are expected to become involved on a contract basis. Government research institutes will carry out the research and development program as well as the monitoring program.

- On the saxaul rangelands, local herders (mobilized by Rangeland Support Teams) will be responsible for implementation, with support from the contracted support teams, specialists, SFEs, and research institutes.
- The national institutional development activities will be implemented partly by FHC in Astana and partly by associated forest institutes, with contractual assistance for studies and specialists where necessary.
- A Grant Program Board will govern the competitive grant program with the PCU serving as the secretariat, and grant recipients implementing approved activities.

Although these implementations arrangements are diverse, which will increase the management challenge, a more uniform set of arrangements is not feasible due to the current jurisdictional situation, and the implementation requirements of the various components.

The project encompasses significant, yet incremental experiential institutional reform. This reform will involve

- Increased attention to cost-effectiveness and other accountabilities (with new approaches in assessing alternative options, monitoring coefficients on quality, using performance evaluation results to inform investment decisions, and increased organizational efficiency associated with streamlining of roles and functions);
- improved flows of information, analyses, and decision-making both within forestry agencies, and to and from external stakeholders, and the promotion of a learning culture throughout FHC and associated forest agencies with new staff attitudes, behavior and skills; and
- a more effective incentive framework (with interactive exchanges between strengthened policy analysis at the central level, participatory natural resource management approaches and other local feedback at the field level).

3. Monitoring and evaluation of outcomes/results

The Results Framework is in Annex 3. Monitoring and evaluation will make use of existing data sources, supplemented by data collection within the project and special survey and assessment updates undertaken by contracted specialists. The Project Implementation Plan includes an annex with detailed guidelines.

4. Sustainability

Experience from earlier Bank involvement in forestry in the Europe and Central Asia (ECA) region strongly supports the expectation of sustainable impact. Institutional sustainability will be addressed by training and increased hand-on experience to develop long-term management skills in project management, communication, policy analysis. The Project is relying on existing administrative and organizational structures especially at the local levels to implement activities. Financial sustainability will be partially addressed through the overall fiscal structure including taxes and established contractual payments (in the case of environmental services which affect overall economic growth and living standards), and in some cases through returns to local communities arising from participatory natural resource management activities (in the case of participatory saxaul management demonstrations, the piloting of PFM in the Irtysh pine forest, and some of the activities funded by the competitive grants fund). The intention of continued expansion of the government investment program (possibly with donor support) will enable the continuation of incremental field activities beyond the life of the project. Staff and routine operating expenses are already and will continue to be provided by the Government. Environmental sustainability will be addressed through the introduction of environmentally sound forest management plans and detailed environmental protection and monitoring guidelines for the forest plantation and management activities. Social and cultural sustainability at the village level will be addressed by ensuring

representation of key groups in developing the participatory natural resource management plans.

5. Critical risks and possible controversial aspects

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective		
Key stakeholders are not willing to participate and support environmental management measures due to problems in policy framework, or the inability of FHC to find the legal "space" to test new approaches	S	Preparation has identified issues related to the incentive and legal frameworks and the need to adjust and clarify rights and responsibilities of local people, and these issues will be further addressed during the project period through the interactive development of analytical capacity and field level implementation experience
Opposition from vested interests or others is significant and obstructs implementation	M	Preparation supported a stakeholder and institutional analysis which has increased the understanding of this risk, and informed project design decisions on implementation and consultation arrangements
Modern technologies of planting cannot be adapted to local conditions due to climatic extremes, soil conditions or other physical factors	M	Technological innovations will be tested and adapted to local conditions on a small scale and then evaluated during the mid-term review, with subsequent expansion dependent on proven success under local field conditions.
Government officials unable to adopt new approaches to natural resource management	M	Realistic plans taking into account learning by doing, and carefully designed and phased human resource development and human resource management reforms
From Components to Outputs		
Arrangements to channel funds to reserves, lezhozes, and communities and to handle procurement on their behalf do not function in a timely and transparent manner	M	Detailed budget and fund flow arrangements have been carefully assessed and addressed preparation, and include clear accountability measures. The procurement plan includes timeline standards that will be monitored.
Institutional capacity is not sufficient; project staff do not have required technical expertise	M	The Project will provide training, technical assistance, and other capacity building activities to the extent required. Much of the capacity development will be learning by doing.
Procurement arrangements are not timely or not effective	M	Operational arrangements and detailed procurement plans for the first eighteen of the project will be available prior to the completion of appraisal
Overall Risk Rating	M	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N(Negligible or Low Risk)

6. Loan/credit conditions and covenants

Conditions of negotiation comprise written assurances from the Government that:

- The Government confirms the procurement plan for the first eighteen months of the project

Conditions of Project Effectiveness comprise:

- The GEF Trust Fund Grant Agreement has been duly executed and delivered, and all conditions related to its effectiveness, or the right of the Borrower to make withdrawals against it, have been fulfilled.

Other Conditions in the Legal Agreements:

- *Special account.* The Borrower will open and properly maintain separate special account for (i) IBRD Loan; and (ii) GEF Grant.
- *Counterpart funds and budget.* A line item will be provided in the annual National Budget beginning 2005 for funds required for implementation of each project component. By June 30 of each year, the Government shall review the provision for counterpart funds and confirm that an adequate allocation for project implementation will be included in the proposed budget for the following calendar year.
- *Management.* The PCU and RPOs would be maintained, adequately staffed, and provided with performance based incentives acceptable to IBRD.
- *Monitoring, Review, and Reporting.* Standard reporting covenants will apply; the PCU will report to IBRD on a half-yearly basis its monitoring and evaluation reports and the status of the agreed key monitorable indicators; and a mid-term project design and implementation review would be undertaken, by IBRD in October 2008, to determine the lessons learnt and make appropriate changes, if needed, in the project objectives, scope and components.
- *Access Restriction Process Framework.* No human settlements will be displaced as a result of project activities, and any adverse impacts on vulnerable people of any other restrictions of access to land resulting from project activities will be mitigated in accordance with the agreed Access Restriction Process Framework.
- *Environmental management.* The project shall be implemented in accordance with the agreed environmental management framework and pest management plan.
- *Participatory Forest Management.* A framework for the Participatory Forest Management activities in the Irtysh pine forests will be developed by December 31, 2006, and reflected in a draft operational manual, and recommendations for an action program regarding any regulatory or other legal steps that may be required for its implementation.
- *Improvement of Saxaul Rangeland Management.* Appropriate sites for the demonstrations will be proposed and the initial framework for the provision of long term use rights will be developed by June 30, 2006. A policy analysis and associated stakeholder consultations on saxaul harvesting in Kzyl Orda will result in a report including a recommended action program by June 30, 2007.
- *Competitive grants program.* An operational manual acceptable to the Bank for the competitive grants program will be approved by the Grant Fund Board by June 30, 2006, with any subsequent revisions to the manual subject to Bank agreement, and the competitive grants program will be implemented in accordance with that manual.

D. APPRAISAL SUMMARY

1. Economic and financial analyses

Environmental benefits. From the Government's perspective, the main justification for the project involves environmental benefits whose value cannot be readily quantified. The national Government attaches significant priority to retaining and restoring the country's limited areas of dense forests such as the Irtysh pine forests. It also wants to accelerate the process of transforming wasteland areas of the Dry Aral Seabed into areas covered with vegetation with growing biodiversity. For saxaul rangelands, it wants to test and demonstrate new approaches to sustainable, resource-led rangeland management systems that can function effectively in a post-transition context. Another factor driving the government's support for the project is its development of government capacity in improving the cost-effectiveness of

government investments for public goods through improved analyses, performance accountability, incentive frameworks, and organizational management.

Cost-benefit analysis. Although quantified cost-benefit analysis is not driving project investment decisions, it has been undertaken and does provide some useful insights. Based on this analysis the economic rate of return of the overall project is estimated at 9 percent, not taking into account additional environmental benefits which cannot be readily quantified.

- The economic rate of return is about 10% for the Irtysh pine. This assumes that 100% of the forest area would be subject to harvesting over the long-term. Given the high intrinsic and recreational value the Kazakhstan government places on these forests, the prospect of future harvesting is uncertain, and the economic analysis is helping clarify the opportunity costs of a sustained logging ban. On an even more disaggregated basis, the quantifiable economic rate of return is about 5 percent for reforestation and for fire management is about 37 percent. The low return on reforestion highlights the intrinsic value that the Government attaches to restoring this relic forest.
- The quantifiable economic rate of return is about 4 percent for the planting of the Dry Aral Seabed, based on a hypothetical sustainable harvest of saxaul wood. This finding highlights the recognition that the most significant benefits of this intervention will be the increased biodiversity and other intrinsic environmental values, assuming that the impact of the project is consistent with past patterns experienced where the Dry Aral Seabed has been covered by vegetation.
- An economic rate of return of 11% for the saxaul rangelands component stemming mostly from increased income from livestock production but also from saxaul wood harvest. This rate of return is lower than it would likely be if later replicated because the costs include the start-up expenses associated with overcoming the constraints of weak local organizational capacity and the inadequate incentive framework of the current usufruct tenure policy.

Employment and poverty impact. The project would generate significant employment and thereby help alleviate poverty. The generation of an estimated 1.2 person days of seasonal employment during the project period, and 630,000 days per year of employment after project completion, in areas of the country which are currently experiencing high levels of unemployment. During the project about 6,000 persons might be employed for an average of three months each year in the Irtysh pine areas, mostly in thinning operations. The project could potentially benefit about 60% of the 10,000 households in the Irtysh project area if this employment is directed toward households most in need. For those households the seasonal employment would increase their incomes by over 20 percent. In the Dry Aral Seabed area, about 4,500 persons might be employed for three weeks each year. The project could potentially benefit up to 40% of the 10,300 households in the DAS project area if this employment is directed toward households most in need, but the increase income per household would not be significant unless several members of any one household participated. The saxaul rangeland management are expected to increase the annual incomes of herd owners by abut US$ 2800. If on average six households own equal shares of a herd, the increment in annual income per household would amount to about US$ 470, which for a household at the poverty line would represent an increase in annual income of over 20 percent. Annex 9 contains further details on the Economic and Financial analysis.

Carbon sequestration. Although the metabolism of the vegetation established or rehabilitated under the project is low, the project will increase carbon sequestration. Reforestation in the Irtysh areas will result in an estimated total incremental accumulation of about 3.9 million tons of carbon during the project period. Improved fire management would prevent the release into the atmosphere about 71,500 tons of carbon. Planting on the DAS

would move forward by decades the sequestration of about 3.6 million more tons of carbon. Additional carbon sequestration would result from the replication and scaling up of investments after project completion.

Incremental Cost Analysis for GEF. Under the baseline scenario, the Government and the Bank would undertake as a matter of national priority, undertake the planting, fire management and thinning activities in the Irtysh pine forests, as well as a portions of the planting and other planting works in Kzyl Orda, a portion of the national level policy development, human resource development, and information support, as well as two thirds of the competitive grants. The provision of GEF support enables the project to increase the scope of international cooperation, capacity development, and monitoring across all components, adapt participatory natural resource management approaches to steppe forest areas in the context of a former Soviet Union country, accelerate vegetation of the DAS, expand the scope of the saxaul rangelands demonstrations, and undertake additional competitive grant subprojects for innovative forest management activities including some that would cover some of Kazakhstan's other globally unique forest areas. Annex 15 provides the full incremental cost analysis.

2. Technical

FHC staff possess good fire management skills but have inadequate facilities to implement necessary fire prevention and fire suppression activities. Forest establishment procedures are outdated and will benefit from local adaptation of new techniques introduced from Scandinavia, combined with study tours to provide access to international knowledge and experience. A research and development program will extend the current planting season and provide reliable methods of direct seeding for more economical forest establishment. There is good awareness of techniques for improved seed production but the FHC has not had the resources to efficiently produce and process the seed. The capacity for landscape planning and biodiversity management will benefit from international contact. There is also good local expertise in range management and saline land rehabilitation, but the techniques need further development. Locally suitable approaches to participatory land management need to be developed in both the rangelands and the Irtysh pine forests. This is a new concept for Kazakhstan and will require careful nurturing. Forest inventory techniques also need updating and integration with spatial (GIS) information management systems. Current resource data are out of date and there is a backlog of forest management planning. Most forestry staff, especially those in the field, do not have direct email or internet access, and many do not even have access to any form of computer.

3. Fiduciary

Procurement. The Kazakh National Law on Public Procurement is not fully compatible with the Bank's Procurement Guidelines. This should, however, not be a problem for the project implementation phase as it would be governed by the Loan Agreement that is an international agreement ratified by the Parliament and therefore supersedes the national law. A procurement capacity assessment has been prepared. Based on this assessment, measures will be taken as needed to ensure appropriate allocation of responsibilities and procurement capacity for project implementation. Procurement review requirements will be agreed based on the procurement risk assessment. A draft procurement plan and operations manual will be completed prior to appraisal.

Financial Management. The FHC will establish within the PCU a financial management system capable of recording all transactions and balances, support the preparation of regular financial statements, including Financial Monitoring Reports (FMR), and safeguard the assets and resources of the project. A financial management capacity assessment will be carried out

during appraisal and a time-bound action plan will be discussed and agreed for the establishment of a financial management system prior to Board. The PCU will include a Financial Manager and an Accountant/disbursement specialist who will be responsible, for the preparation and production of the annual and mid-term financial statements. The project financial management system will be reviewed for compliance with Bank procedures. The Financial Management System (FMS) will properly record all project-related transactions and monitor expenditures per category and component. Internal accounting controls for the project will be set out in detail in the manual of financial procedures to be developed by a financial management design consultant. The manual, to be reviewed by the Bank, will be satisfactory for providing reasonable assurances that transactions will be properly recorded and resources safeguarded. The chart of accounts for the project will be designed or adapted to allow reporting according to harmonized requirements of the World Bank and the Governments of Kazakhstan. The design of the project accounting system, including the development of appropriate manuals, is currently underway, under financing by a PHRD grant.

4. Social

Social and Institutional Issues. The social and institutional analysis and the analysis on community involvement, which were both based on stakeholder analysis and field surveys, has identified the following key issues:

- Issues in local social capacity in context of past FSU legacy of government dependency, mistrust, requirements of involuntary labor, and inexperience participatory decision-making
- Organizational culture legacies from the Soviet period comprising rigid top-down administrative management styles within forestry agencies, and poor communication within and among forest agencies as well as with external stakeholders.
- Illegal pine logging and saxaul fuelwood harvesting due to strong vested interests, inadequate incentives for local people to take responsibility for forest protection, widespread unemployment, and market pressures.
- Desires by foresters and local inhabitants to return to the former Soviet-style system of forest management with a huge number of jobs, no timber market (and thus no illegal felling), a public awareness campaign on valuing and caring for the forest, and a high level of public financing for forest management.

Participation measures. To address these issues, project preparation included:

- a summary analysis of community involvement issues and opportunities
- plans for increased consultation and transparency in forest policy, planning, and financial management activities under the national component
- a draft communications strategy
- plans for activities to support livelihood interventions in the Irtysh Pine Forest area that are linked to improved forest management and protection
- participatory arrangements for the saxaul rangelands component,
- analysis regarding the access restriction framework

Institutional analysis. An institutional analysis undertaken during project preparation describes the roles and organizational structure of national and oblast forest agencies. It analyzes issues related to information access and distribution, organizational management styles, external relations and linkages, the negative impact of frequent recent organizational restructuring, the poor state of forestry agency facilities, the deterioration in staff capacity associated with poor pay and training, and potential implications of international trends in the organizational management of forest agencies.

Access Restriction Framework. The project would not involve physical involuntary resettlement. There is no encroachment of human settlements in the project area forests and project itself will not cause involuntary physical displacement of people. Overall, the project is likely to actually increase the access of local people to natural resources, and would impose increased restrictions for only limited areas, as part of participatory resource management schemes. However, existing restrictions applicable to the project areas may also affect the reputation of the project. *An Access Restriction Process Framework (ARPF)* has therefore been prepared which describes: the project components potentially associated with restrictions of access, the people likely to be affected, and the participatory processes by which the project was prepared and will be implemented.

5. Environment

Environmental benefits. The environmental screening category is B. No significant adverse environmental impacts are foreseen. The project would have beneficial environmental impacts including reforestation of degraded lands, improved conservation and sustainable use of biodiversity in selected ecosystems, improved sheltering from wind and associated better air quality, and reduced use of potentially harmful pesticides. Environmental considerations are mainstreamed into the project objectives and components, and will be integrated in planning, implementation, and monitoring at both the local and national levels. The reforestation is expected to utilize native species of pine, saxaul, tamarix, herbaceous plants and grasses for the main components and also include native species of poplar, willow, aspen, etc. for the competitive grant fund. The forest planning and management activities (including fire management strategies) will address natural habitat considerations in both the site-specific and landscape context. Where possible the project will include the development of knowledge and monitoring of good environmental practice.

Pest management. The project will help develop more environmentally acceptable pest management strategies. There is a possibility of using a limited amount of pesticides in preparing planting stock in nurseries and in major pest outbreaks, but overall pesticide use is likely to be reduced in favor of biological controls.

Consideration of Radiation Issue. The Irtysh Forest may have been affected by fall-out of 1949-1962 nuclear tests on the nearby Semipalatinsk testing grounds. Preliminary data indicate that currently the dose contribution of most radionuclides is low. The risks associated with this nuclear contamination and the implications for forest management and related aspects such as soil erosion, fire management, and use of forest products is currently being assessed in an analysis is carried out by a multi disciplinary team and will be peer reviewed by an international specialist. The study will become part of the environmental assessment.

Minor adverse impacts. Temporary minor impact (dust, minor soil loss) can be expected from planting activities, building construction and other works. Within the Irtysh forests roads radiating from each main fire fighting base within the forest are envisaged, but these would not increase external access. Improvement of shelter and access to water in the woodlands that could increase livestock movement and lead to trampling and some loss of topsoil will be carefully managed with necessary safeguards to prevent environmental deterioration.

Stakeholders. Key stakeholders will include the rural people living in and around the forests, livestock-herder families, forest users, forestry staff, as well as environmental NGOs. Project preparation included a series of stakeholder consultations, and will include additional consultations focused on the draft environmental assessment report on xxxxx in Semey and

yyyyyy in Kzyl Orda. Prior to appraisal mission, a Russian version of the EA report will be disclosed within Kazakhstan, and Russian and English versions will be made available in the Bank's Infoshop.

6. Safeguard policies

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[X]	[ ]
Natural Habitats (OP/BP 4.04)	[ ]	[X]
Pest Management (OP 4.09)	[X]	[ ]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[ ]	[X]
Involuntary Resettlement (OP/BP 4.12)	[X]	[ ]
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	[ ]	[X]
Forests (OP/BP 4.36)	[X]	[ ]
Safety of Dams (OP/BP 4.37)	[ ]	[X]
Projects in Disputed Areas (OP/BP/GP 7.60)*	[ ]	[X]
Projects on International Waterways (OP/BP/GP 7.50)	[ ]	[X]

The project is not expected to carry significant safeguard risks.

Environmental Assessment is triggered as explained above under Section D 5. The Involuntary Resettlement policy is triggered as explained under D 4. In view of possible minor risks, the safeguards on forest and pest management are also triggered.

(i) The forests policy is triggered because the project is intended to affect forested areas. It will be implemented in accordance with the Bank's operational policy. It will support investment in rehabilitation of existing degraded forests and woodlands to restore protective cover and to make these and other forests more productive. The project would not finance plantations that involve any conversion or degradation of critical natural habitats. The project would not finance industry-scale commercial harvesting operations. Any harvesting by local communities or other local entities supported by the project would adhere to a time-bound action plan for achieving a standard of forest management developed with the meaningful participation of locally affected communities, consistent with the principles and criteria of responsible forest management.

(ii) Pest management is triggered because the project would help to develop more environmentally acceptable pest control strategies. There is a possibility of using a limited amount of pesticides in preparing planting stock in nurseries, and in major pest outbreaks. In such cases the possibility of using biocontrol products will be explored before considering chemical interventions. Project preparation will include an evaluation of current patterns of pest management and pesticide use and make recommendations where needed on introducing/expanding integrated pest management tools, strategies and skills improvement Action plans, including pest management plans will be incorporated into the overall forest management plans.

7. Policy Exceptions and Readiness

No policy exceptions are anticipated. Project appraisal is awaiting completion of the environmental assessment, which still requires a satisfactory analysis of the radionuclide contamination issue, as well as refinement in response to comments. Design of the procurement is underway and design of financial management is expected to commence

* *By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas*

shortly. Loan negotiations will need to await completion of the Government's internal review process.

Annex 1: Country and Sector or Program Background

KAZAKHSTAN: Forest Protection and Reforestation Project

Kazakhstan has an extensive area of rangelands and forests. Kazakhstan possesses a significant forest resource, with 11.5 million hectares of forested land, of which 5.3 m ha are saxaul woodlands and associated rangelands. In absolute terms, it has the third largest forest area in the Eastern Europe and Central Asia (ECA) Region, in spite of the fact that forests areas account for a mere 4% of its territory. In the traditional measure of forest abundance - total growing stock of timber - Kazakhstan with its 383.7 million m^3 of standing timber ranks low compared to forest-rich ECA countries, although in the same league with South Africa, Vietnam or the Philippines. Its limited forest production is partly a result of low temperatures and low precipitation. Kazakhstan is also the sixth largest country worldwide in terms of the size of its grasslands, which cover more than 170 million ha (60%) of its land area.

Kazakhstan's forests and rangelands play an important role, providing key environmental and economic services. They are a key factor in soil and sand retention the face of the country's strong winds, protect watersheds, and reduce siltation of waterways and reservoirs. They also have been a driving force in the country's economy as a source of fodder, food, fuel, medicinal plants, and recreation. The economic outputs of forest lands and rangelands provide important incentives for sustainable management of these ecosystems, and also constitute significant economic and social costs when deforestation, desertification and other severe degradation of these lands does occur. About 300,000 people are directly dependent on the forest sector, while an estimated 2.5 million live in or rely on the forests for fuel wood, fodder and other forest products. An estimated 4-5 million people (40% of the population), many of them living in poverty, depend directly or indirectly on rangelands for their livelihood. Most rangelands are drylands with an average rainfall between 100 and 300 mm and a wide temperature-range from over 30^{o} C in summer to less than minus 25^{o} C in winter. Some of these lands, such as the southern saxaul woodlands, the Betpak Dala and Moyin Kum deserts in south Central Kazakhstan contain unique landscapes and ecosystems, which provide natural habitat for numerouse species of important flora and fauna. Kazakh rangelands and forests also contribute to the global carbon balance by storing substantial amounts of carbon.

Legacy of land degradation. Kazakhstan inherited some of the greatest environmental problems of the post-Soviet republics. The Virgin Land Scheme ploughed up fragile rangelands for short-lasting agricultural production in the late 1950's. This was followed by promotion of irrigated agriculture with unsustainable water use leading to changes in water tables and landsalinisation. This type of poor water management forced the livestock out to the less productive grasslands and most likely contributed significantly to the drying of the Aral Sea. As of 2004, there were over 4 million ha of dry Aral seabed, of which some 2.6 million ha was within Kazakhstan. In the 1970s the Soviet Government created large livestock farms on the rangelands, which inevitably resulted in overgrazing and deterioration of rangeland resources with significant negative consequences**.** Ecologically risky land use for oil drilling, the space program, and nuclear testing further degraded valuable land. As a result of these policies and actions large areas of the country's ecologically productive land have become wasteland.

Kazakhstan's forest lands and rangelands continue under threat. The generally arid, extra-continental climate of Kazakhstan makes the existing forest and rangeland ecosystems particularly susceptible to various natural and man-made threats, including:

- fires (both natural and anthropogenic, including agricultural fires)
- pest infestations that often follow fires

- overgrazing of livestock
- over-harvesting through illegal and poorly managed 'sanitary' cutting, and through increased subsistence cutting for fuelwood
- habitat degradation from excessive hunting/tourism development
- desertification

Almost 10% of all forests in Kazakhstan are plantations established in the Soviet period for wind erosion and sand control on agricultural lands. However, forest lands and rangelands have been subject to increased threats of deforestation and other degradation in the recent years of political and economic transformation in 1991. For forests the main results have been increases in uncontrolled wildfires, unauthorized cutting, overgrazing, changes in water tables, development of agricultural land, desiccation of riparian forests, as well as pests and diseases. Kazakhstan's forests suffered dramatic losses from fire in 1997, affecting as much as 2% of the forest area. For rangelands the transition led to reduced mobility of livestock herds, and thus increasing pressure on and deterioration of village pastures. Much of the rangeland in the country is abandoned because of lack of access, degradation of vegetative cover, lack of available water, and absence of basic amenities. It is now estimated that less than 50% of the country's rangelands are usable and that only one third (about 60-70 million ha) is currently used. The significance of each of these threats varies by region.

Different regions – different issues. Kazakhstan has a number of very distinct forest and rangeland domains that are separated geographically by the vast treeless space of the central and western deserts and semi-deserts. Major ecological zones include:

- the *Altay Mountains* (home to unique Siberian biodiversity and also a concentration of 75% of the commercial-grade spruce and fir timber in Kazakhstan).
- the *northern forest-steppe* (with birch, aspen and pine forest islands including the relic Irtysh pine belts fragmented amidst farmland – an important source of local construction material and fuelwood, as well as a critical natural habitat for wildlife and area for recreation). This area has been especially damaged by fires in recent years.
- The adjoining *lowland grass steppe*, with rangelands characterized by shrubby vegetation, especially feather grass, fescues, and wild oats.
- the *Tien-Shan and Ile-Alatau Mountains* (a globally unique habitat in terms of agrobiodiversity, wild nut and fruit production, a critical water source for the Aral Sea and Lake Balkhash, and an internationally important tourist destination).
- the *central semi-desert*, with shrubby vegetation dominated by wormwood.
- the *saxaul scrub woodlands and associated rangelands of the southern desert* (a source of high-quality fuelwood and a critical habitat for livestock grazing and sand dune control near the Aral seabed). This area has been especially threatened by over-harvesting of fuelwood.
- In addition, there are *riparian forests* along major rivers. These forests play an important water-regulating role in the southern floodplains (tugay forest) and constitute almost the only type of forest in the oil-rich but *treeless desert of western Kazakhstan*.

Tenure of Forest Lands. Since Kazakhstan's inclusion in the Soviet Union, forestlands of the country have been, and continue to be, owned by the state. Because the local wood-based industry was dependent on subsidized imports of timber from other parts of the Soviet Union, the forests in most of Kazakhstan (except for the forest-rich areas in the East) were primarily managed for protection and hunting. Collective and state farms were in charge of managing agricultural forests and shelterbelts as well as saxaul woodlands and other rangelands. Since independence, a number of laws and regulations have been enacted to regulate land use and ownership, but these have been targeted at arable land with little attention given to the peculiarities of the saxaul rangelands and agricultural woodlands. A national debate about

land management in 2001 and 2002 has more or less reached consensus that private owners can hold arable land but that forest lands (including most existing saxaul rangelands) remain the domain of the State. Saxaul rangelands, however, may be leased from the State for livestock grazing and other purposes.

Forest Institutions. Kazakhstan's institutional framework for forest management, a complex system of state, regional and local institutions, has undergone substantial changes in recent years. The Forestry and Hunting Committee (FHC) is responsible for managing almost all Kazakh forests, woodlands and protected areas, including the dry Aral Seabed and the saxaul rangelands, The FHC consists of a small central staff of 32 headquartered in Astana, Forest and Hunting Committee Departments for each of the 14 oblasts (with a staff of some 232 inspectors) based in the regions, a number of forest and nature reserves, and several technical institutions (e.g. seed production, field studies, and fire protection) based in various parts of the country that provide technical support to the sector. The institutional restructuring in 2003 established Akimat Forestry and Hunting Divisions in the 14 oblasts and transferred the 124 former leskhozy which are now known as State Forest Entities (SFEs) , with their staff of about 5,000 (down from 25,000 in 1990) to Oblast Akimat administration. In December 2004, the Oblast Akimat Forestry and Hunting Divisions were consolidated with water resource management and environment functions into Oblast Akimat Natural Resource Management Divisions.

Government Support for Forestry. Following independence and as part of the economic transition in the forest sector, the wood-based industry was privatized and has mostly collapsed. With the demise of most collective and state farms, the management of most saxaul rangelands and agricultural forests has been transferred back to SFE management. Furthermore, the transfer of the 124 SFEs to the oblast level, even on condition of preserving their organizational and legal form, functions and authority, has resulted in a vacuum. The Oblast Akimats have failed to provide either the political leadership or the financial resources necessary for the SFEs to perform their forest and wildlife protection functions effectively. In general, public funding for forest management and environmental protection in Kazakhstan declined dramatically in the 1990s and remained among the lowest levels in the ECA countries, averaging US$0.5 per capita per year. As a result, there was little investment in maintaining forest management institutions, including forestry staff, equipment and machinery; most afforestation, forest inventory and protection activities came to a virtual standstill by the end of the 1990s, and there was also a drastic reduction in the resources available for forest fire management.

Organizational Issues. The legacy of the recent institutional restructuring of forest institutions in Kazakhstan has resulted in a number of unresolved organizational and functional issues; it has also produced in a high level of confusion and "restructuring fatigue" among forestry staff. As noted above, in the late 1990's, the forest agencies went through several reorganizations that principally sought to separate management and oversight functions. The results of these reorganizations were not clearly satisfactory. In 2003, the new Forest Code delegated most forest management functions from the central FHC to the oblast governments (i.e. the Obalst Akimat Forestry and Hunting Divisions and SFEs), but there is still confusion over the division of roles between state and local institutions and dissatisfaction with the level of oblast financing provided. With the recent fiscal recovery due to oil revenues, public funding for management of forest lands and saxaul rangelands is gradually increasing. This will relieve some of the financial resource constraints, but a number of fundamental organizational issues remain. For example, the management culture within forest institutions remains top-down and bureaucratic, thus effectively stifling the free flow of communications/information necessary for flexible, effective management. The

multiple changes in the institutional setup have resulted in gaps and overlaps in key forest management functions, and the poor communications attending these changes have often left forestry staff confused (even resentful) about their purpose. Forest and associated rangeland resource information and analysis are substantially outdated, so no proper resource management can be planned. In fact, access to and dissemination of forest information in general remains poor, whether for forestry staff within the institutions or for the public at large. Fortunately, there is no evidence of serious conflict with local populations in or around forest lands.

Human Resource Constraints. The forest sector suffers from major human resource constraints, there is currently a lack of adequately trained foresters for positions in the forest institutions, much less persons with the range of new skills required (e.g. extension, marketing, public partic ipation) for effective, modern forest management. Furthermore, the forest staff is aging and facing difficulty in recruiting qualified foresters because of low salaries, limited career opportunities and low motivation. Part of the problem is that universit ies and institutes in Kazakhstan are not offering the courses or degrees required for modern forestry.

Other Issues. Finally, some aspects of the 2003 Forest Code are controversial and will require re-examination in the next few years. For example, there is a need for additional measures to prevent corruption and other governance problems and additional options for improving economic incentives. Strategic decision-making suffers from a lack of public involvement; it is clear that forest institutions will have to adapt to more participatory approaches for forest management in the future.

Forest and Rangeland Studies. In 2002, joint studies on forests and rangelands undertaken by the Government of Kazakhstan and the World Bank recommended that the government develop and adopt a new a strategy to reflect change of paradigm in forest and rangeland management, with more rights and responsibilities delegated to local decision-making, with emphasis on phased implementation, and with allowances for manageme nt objectives and systems to differ by region. The study suggested that investments in improved public forest management should cover the following areas:

- Substantial upgrades in the national and local capacity for fire and pest protection
- Rapid inventory of the forest resource base, using landscape-ecological approach, preparing broad functional zoning of forest areas with adequate public participation
- Substantial upgrades in the local capacity for reforestation and afforestation, and
- Training for central and local forestry staff, especially in – economic analysis, marketing policies, extension, public and community participation.

The present project is a direct result of this collaborative effort.

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies

KAZAKHSTAN: Forest Protection and Reforestation Project

Project Name	IP	DO	US$ m	Institution	Approval Date
Agricultural Competitiveness Project			28.5	IBRD	April 2005
Agriculture Post-Privatization Assistance Project			35	IBRD	December 2004
Irrigation and Drainage Project	S	S	80	IBRD	June 1996
Syr Darya and Northern Aral Sea Project	S	S	64.5	IBRD	June 2001
Drylands Management Project (GEF)	S	S	5	IBRD	June 2003
Central Asia Transboundary Biodiversity Project (GEF)	S	S	10.15	IBRD	June 1999
Small Grants Program				IBRD	Annual
Water Resources Management and Land Improvement project			40	ADB	December 1997
Regional Rural Development study and planned project			0.68	ADB	September 2003
Central Asia Counties Land Management Improvement Initiative			20	ADB	May 2004
Development of strategy to implement Convention on Biological diversity			0.31	UNDP	July 1997
In-situ Conservation of Kazakhstan's Mountain Agrobiodiversity			0.25	UNDP	May 2000
Integrated conservation of priority globally significant migratory bird wetland habitat: a demonstration on three sites			8.7	UNDP	
GEF Small Grants Program			0.21	UNDP	April 2002
Conservation and Sustainable Use of the Altay Sayan Biodiversity (Kazakhstan part)			0.06	UNDP	
Conservation and Rehabilitation of the Wild Apple Forests in the Foothills of Ili Alatau			0.1	UNDP	2003
Conservation and Rehabilitation of the Biodiversity of Saksaul and Tamarisk Eco Systems			0.1	UNDP	August 1998
Rehabilitation of Biodiversity in the Bush / Grass Eco Systems in Degraded Lands			0.1	UNDP	1999
Sustainable Management of Grasslands (Mongolia)			3.1	UNDP	December 2002
Convention on Combating Desertification Project			0.4	GTZ	January 2002
Aral Sea Project (Uzbekistan)				GTZ	May 2002
Biosphere Reserve Issyk-Kul (Kyrgyzstan)				GTZ	June 2002
Support to Agricultural Producers to Establish a Vertical Market Integration			1.9	EuropeAid (TACIS)	September 1995
Central Asia Microfinance Component			11.0	USAID	September 2002

Implementation Progress (IP)/Development Objective (DO) ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory

Annex 3: Results Framework and Monitoring

KAZAKHSTAN: Forest Protection and Reforestation Project

Results Framework

2025 Vision[1]	2025 Outcome Indicators	Use of Outcome Information
Forest lands and a ssociated rangelands rehabilitated and well managed s	Land degradation (specifically, deterioration or lack of tree or other vegetative cover) prevented, reduced, or ameliorated in • Irtysh pine forest forests: 180,000 ha burned or deforested area replanted and 650,000 ha good condition • Dry Aral Seabed: 800,000 ha covered with vegetation (through planting and natural spread) • Effective interventions underway to maintain public saxaul rangelands in good condition • Organizational and procedural arrangements facilitating sustainable and cost-effective results applied to the management other forest lands and other public expenditure investment programs	Set project outcomes in context of long-term vision

Project Development Objective	2012 Outcome Indicators	Use of Outcome Information
Development and initiation of cost effective and sustainable ways of environmental rehabilitation and management of forest lands and associated rangelands, with a focus on the Irtysh pine forest, dry Aral Seabed, and saxaul rangelands	Land degradation (specifically, deterioration or lack of tree or other vegetative cover) prevented, reduced, , or ameliorated in • Irtysh pine forest including 48,000 ha of rehabilitated forest and reversal of fire degradation trends on 650,000 ha • Dry Aral Seabed: more than 100,000 ha of current total 2.2 mln ha dry seabed area covered by vegetation (from pre-project coverage, project planting, and natural spread) • 156,000 ha of saxaul and adjoining rangelands with sustainable resource-led grazing management	Gauge • scale of coverage and extent of changes in land degradation and associated environmental and economic impacts, in relationship to overall magnitude of land degradation problem and in comparison to projections of what would happen in absence of project; . • realism of projections and adjust project design or expectations if necessary; • success of new incentive frameworks which would help prevent future degradation and thus make mitigation worthwhile; and inform decision-making on future public inv estment programs in project areas
	Capacity and decisions to upscale investment programs for forest lands based improved knowledge of performance, costs, and impacts as demonstrated by. • Decisions to scale up Irtysh pine reforestation programs • Decisions to scale up vegetative planting of dry Aral Seabed, and • Replication of saxaul rangeland restoration program with non-project funds • Application of lessons learned from competitive grant subprojects	Gauge success of new operational arrangements and analytic capacities which promote ongoing research and learning culture, responsive adaptation, and improved accountability.

[1] The 2025 vision is indicative only and does not represent a formal view of the Government. It will be further considered and refined under the policy subcomponent of the project.

Project Development Objective	2012 Outcome Indicators	Use of Outcome Information
	Number of people employed under the project, with incremental employment going disproportionately going to those currently living below official poverty line Irtysh pine: 18,900 employed Dry Aral Seabed: 8150 employed, Saxaul rangelands: 150 self employed beneficiary households	Gauge magnitude of social and poverty impacts of project
	Improved knowledge of natural resource dynamics and management, and capacity for cost effective and results oriented public expenditure on forest lands	Gauge extent of institutional impact
	Project reputation for integrity and public support for improved forest and associated rangeland management as reflected in public opinion surveys and government budget	Gauge reputation for integrity and effectiveness

Intermediate Results	Results Indicators for Each Component	Use of Results Monitoring
Component IA: Irtysh pine forest: Improved reforestation through re-establishment of seed production areas, applied research on cost-effective nursery and planting technologies (e.g, greenhouses, containers, seeding), and expansion of program to enable completion of reforestation of 180,000 ha by 2025.	Component IA : 20,000 ha replanted and 21,000 ha direct seeded during project period, and by year 6 unit costs of replanting reduced from US$240 per ha to less than US$110 per ha with survival rate increased from 60% to 85%; knowledge of productivity parameters acquired; and revised arrangements for flexible, performance based budgeting and contracting	Component IA: YR1-YR6: Low levels may flag constraints in revised budgeting and contracting arrangements, fund flow, capacity, operational arrangements, methodologies, or unrealistic expectations
Component IB: Irtysh pine forest: Development and implementation of improved forest fire management through improved fire prevention, improved fire detection, and fire suppression to reverse long-term trends in degradation of forest lands from fire.	Component IB: 650,000 ha under improved fire management comprising: (i) effective fire prevention system with bare earth fire breaks and fuel reduced buffer zones accompanied by public education campaigns; (ii) more effective fire detection system with obsolete towers replaced and new towers where needed; (iii) improved fire suppression capability through better equipment, fast-attack vehicles, replacement of obsolete fire trucks and improvement of key forest roads and (iv) Annual program of thinning and cleaning including a 15-year backlog, integrated pest management support provided	Component IB: YR1-YR6: Low levels may flag constraints in fund flow, capacity, or operational arrangements, methodologies, or unrealistic expectations
Component IC: Irtysh pine forest: Forest Partnership Development	Component IC: PFM framework designed and reflected in operatonal manual, and then under implementation, initially in xx villages and then in yyy additional villages.	Component IC: YR1-YR6: Low levels may flag constraints in fund flow, capacity, or operational arrangements, methodologies, or unrealistic expectations
Component IIA Dry Aral Seabed: Vegetative planting: Increased afforestation through upgraded facilities, improved contracting arrangements, applied research on improved planting methods, and expansion of program to achieve planting rates of at least 31,000 ha per year by 2011.	Component IIA 44,000 ha planted and 35,000 ha direct seeded during project period, with year 6 unit costs reduced from US$207 to less than US$175 per ha with survival rate no less than 55% and a natural spread consistent with doubling in ten years, using revised arrangements for flexible, performance based budgeting and contracting	Component IIA YR1-YR6: Low levels may flag constraints in fund flow, capacity, or operational arrangements, methodologies, or unrealistic expectations.

Intermediate Results	Results Indicators for Each Component	Use of Results Monitoring
Component IIB Participatory saxaul rangelands rehabilitation: Herder agreements to enable restoration of degraded saxaul rangelands, and provision of water resources for compensatory rangelands.	Component IIB 30 demonstrations covering a total approximately 6000 ha covered by planting with seedlings and seeds with survival rates no less than 55% and at least 150,000 ha rangelands provided with increased access to water for grazing animals.	Component IIB YR1-YR6: YR1 -YR6: Low levels may flag constraints in fund flow, capacity, or operational arrangements, methodologies, or unrealistic expectations.
Component IIIA: Improvements in policy, information, and human resource capacity	Component IA: (i) analytical studies on policy and public expenditure, (ii) expansion of information facilities and development of information system (iii) HRD plan and in-service training program;	Component IA: YR1-YR6: Low levels may flag……, or unrealistic expectations
Component IIIB: Competitive grant fund for pilot demonstration investments (e.g. timber usufruct sharing, ecotourism, value addition processing of birch, community involvement in reforestation or environmental education, private plantations, tungai floodplain protection, etc.)	Component IIIB : Operational manual approved, and # of grants approved and then implemented with well monitored results	Component IIIB: YR1-YR6 Numbers indicate that this component is functioning
Component IIIC Project administration is satisfactory	Component IIC Bank supervision ratings	Component IIIC YR1-YR6: Flags administrative or communication problems

Arrangements for Results Monitoring

	Target Values			Data Collection and Reporting		
Outcome Indicators	**Baseline**	**2008**	**2012**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Prevented, reduced or ameliorated land degradation	Degraded area evident on 180,000 ha of Irtysh pine forest and 2.2 million ha of dry Aral Seabed[2]	Initiation of restoration evident	Restoration evident in accordance with plans and degradation trends reversed	Baseline, mid-term and completion assessments	Independent evaluation based on remote sensing supported by ground survey	Specialist team contracted by FHC as part of mapping and field survey study
Decisions to scale up programs	Insufficient knowledge of performance, costs, and impacts to justify large scale program	MTR confirms plans to scale up Irtysh forest and dry Aral Seabed program	Post project plans to to restore Irtysh forest and dry Aral Seabed along lines of indicative 2025 vision and,replicate saxaul rangeland program, and apply lessons from grant subprojects.	Baseline, mid-term and completion assessments	Project records	FHC
Number of people employed seasonally as a result of project, and analysis on extent to which benefits go to those currently living below official poverty line • Irtysh pine: o # employed by project o # Forest Partnership beneficiaries • Dry Aral Seabed: o # employed by project • Saxaul rangelands: o # participants • Competitive grants: o # beneficiaries	0	TBD	6000 TBD 4500 TBD TBD	Baseline, mid-term and completion assessments	Analysis based on project records, social assessment, and poverty data	Specialist team contracted by FHC as part of socioeconomic study

[2] Area of dry Aral Seabed to be confirmed by baseline mapping in 2005, which will also provide data on size and condition of Kzyl Orda saxaul rangelands.

	Target Values			Data Collection and Reporting		
Outcome Indicators	**Baseline**	**2008**	**2012**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Improved knowledge of natural resource dynamics and management, active policy development, and capacity for cost effective and results oriented public expenditure on forest lands	Little knowledge of dynamics, policy development, or results oriented public expenditure	Systems established	Knowledge, policy development, and result oriented public expenditures evident	Baseline and completion assessments	Assessment of specialists	Specialist contracted by FHC as part of socioeconomic study
Project reputation for integrity and public support for improved forest and associated rangeland management as reflected in public opinion surveys and government budget	Original reputation assessed	Improving trend in reputation for integrity and public support	Further improvement in trend	Baseline, mid-term and completion assessments	Public opinion survey and analysis of public investment trends	Specialist team contracted by FHC as part of socioeconomic study

		Target Values						Data Collection and Reporting		
Results Indicators for Each Component	**Baseline**	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**YR6**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Component IA: Cumulative area of Irtysh pine replanted under project ('000 ha) Survival rate Cost/ha (US$) Cumulative area of Irtysh pine direct seeded ('000 ha)	0 50% $210 0	0 0	1 0	4 0	7 1	12 6	20 85% $180 21	Quarterly reports	Project records	FHC
Component IB: %fire management investments implemented in accordance with annual workplan	0	mostly	fully	fully	fully	fully	Fully	Quarterly reports	Project records	FHC
Component 1C: Forest Partnenership Development program designed and piloted			*[3]		*[4]		*[5]	Quarterly reports	Project records	FHC

[3] Forest product use feasibility study completed and PFM framework designed
[4] Initial training completed and study recommendations and PFM operational.
[5] PFM program expanded to additional villages.

		Target Values						Data Collection and Reporting		
Results Indicators for Each Component	**Baseline**	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**YR6**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Component IIA Cumulative area of dry Aral Seabed planted ('000 ha) Survival rate Cost/ha (US$) Cumulative area direct seeded ('000 ha)	0 55% $207 0	0 0	5.5 0	11 0	22 5	33 15	44 >70% <$175 35	Quarterly reports	Project records	FHC
Component IIB Cumulative area of participatory saxaul rangeland restoration demonstrations initiated ('000 ha) Cumulative number of ha with improved access to water for livestock ('000)	0 0	2 50	4 100	6 150				Quarterly reports	Project records	FHC
Component IIIA Improvements implemented in accordance with annual workplan		mostly	Fully	fully	fully	fully	Fully	Quarterly reports	Project records	FHC
Component IIIB # of grants approved and under implementation			*[6]	*[7]	*	*		Quarterly reports	Project records	FHC
Component IIIC Bank supervision ratings		S	S	S	S	S		Semi-annual reports	Bank supervision report	Bank

[6] Grant program design finalized and arrangements established

[7] Grants issued. No specific target set but numbers indicate grants program is functioning

Annex 4: Detailed Project Description

KAZAKHSTAN: Forest Protection and Reforestation Project

This project will be implemented by the Forest and Hunting Committee of the Government of Kazakhstan (FHC) with headquarters in Astana. The Project Director will be the Deputy Chairman of the FHC. The principal objective of the project The project objective is to develop and initiate ways of cost effective and sustainable environmental rehabilitation and management of forest lands and associated rangelands, with a focus on the Irtysh pine forest, the dry Aral Seabed, and saxaul rangelands. The development objective is both local and global in nature. The project will support field operations, provision of new technology and equipment, as well as staff capacity building. The field operations will take place partly in forests directly managed by the FHC along the Irtysh River, and partly on rangeland and the dry bed of the former Aral Sea in the Kyzyl Orda Oblast. In addition, innovative forest development projects outside these main areas will be funded under a competitive grants scheme.

The design of the project is based on two World Bank sector studies in Kazakhstan: Forests in Transition (2004) and Rangelands in Transition (2004), combined with extensive field inspections and discussions with FHC staff, specialists in academic institutions and community groups.

Component 1 Rehabilitation of the Irtysh Pine Forests

Rationale:

There is a backlog of some 180,000 ha of the relict Irtysh pine forests (Scots pine, *Pinus sylvestris*) that were destroyed by wildfires since 1997 and have not yet been replanted, or have not regenerated naturally in a satisfactory manner. Exact figures for the backlog are expected to be available from satellite imagery by mid 2005. Current resources and technologies available to the Forest and Hunting Committee (FHC) are inadequate to address this major reforestation task and there is a shortage of local pine seed. In addition to increased resources, the project will provide new technologies that will assist in accelerating the rate of reforestation.

The wildfire disasters of the past few years have a variety of causes, some of which can be alleviated by activities planned in the project. Hand in hand with faster reforestation, it is necessary to improve the capacity of forest managers to prevent and control forest fires. Some improvements in the approach to forest management will reduce fire hazards and make the forest less vulnerable to insect attack.

Some of the wildfires have been attributed to arson, and linked to illegal logging, which has been a major problem in this area. The root cause of this problem is believed to be the continuing high level of unemployment in the region. The project will seek to alleviate unemployment through job creation in forest management activities, promotion of contractual reforestation activities and promotion of alternative forms of economic activity in the immediate vicinity of the forest estate.

Proposed Project Activities

Sub-component 1.a: Reforestation of fire-damaged pine forest

The first step in improving the reforestation capacity in the two Special Purpose Natural Reserves that make up the Irtysh pine forest, Ertis Ormaney and Semey Ormaney, will be the establishment of 10 50-hectare seed production areas. These areas are to be located in forest of

high quality so that the seed so produced will be of higher genetic quality than in the general forest area. They will be dispersed across the forest area to minimize the risk of loss from any future wildfires. The seed production areas will be thinned from the present 1200+ stems per hectare to about 500 per hectare of the best-formed and healthiest trees. The trees that are removed will be sold to local industries. To complement the increased production of quality seed, new seed processing, testing and storage facilities will be provided to enable a carryover of seed supplies for use during seasons of poor seed production in Scots pine and to support a possible expansion of natural regeneration using direct sown pine seed.

As local seed of the pine is in short supply, due to past insect attack and other factors such as overstocking, it may be necessary to import seed from adjacent forest types in Russia to enable an increase in the level of reforestation in the early years of the project. As the Russian forests are the same species from the same ecological zone, this should pose no difficulty from the genetic conservation viewpoint. This has also been done in past occasions of seed shortage.

The next sub-component will be the upgrading of the nursery system. Currently only bare-root planting stock is produced, using a low-input nursery system that is far less efficient than modern bare root systems, such as those used in Scandinavia. Modern nursery bed management and precision seeding equipment will be introduced to one nursery at Semey Ormaney and one nursery at Ertis Ormaney in the first year of the project, and expanded to three additional nurseries after the MTR. The upgraded nursery facilities will be backed up by a modern seed processing and storage unit. It is anticipated that this new nursery technology will provide nursery stock that is cheaper to produce and of better quality than current stock. This should be reflected in improved survival when planted out in the field from the present 50% to at least 80%.

Table 4.1 below sets out the planned increase in the rate of reforestation using planted seedlings, over the 6-year period of the project (note that seedlings grown in the 6th year are actually planted in the 7th year).

Table 4.1 Expected Annual Area of Pine Planted in the Irtysh Forest

Year	2006	2007	2008	2009	2010	2011	2012
Current level of planting (ha)	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Project level of planting (ha)	-	1,000	3,000	3,000	5,000	8,000	10,000
Project direct seeding (ha)	0	0	0	1,000	5,000*	15,000	15,000

Note* at this point it is expected that as a result of successful research on direct sowing and increased seed supplies from the seed production areas, additional large areas of burnt forest will be regenerated each year using broadcast pelleted seed.

The climatic conditions in the Irtysh region are difficult for planting bare-root stock and currently planting is confined to an intensive effort in a two-week period in early spring. To test the potential for widening this planting window, the project will install a complete nursery system to produce container-grown seedlings. Such systems are widely used in northern Europe and permit planting over a wider span of conditions. Container-grown seedlings are much more drought resistant than bare root seedlings and can be grown in one year instead of two years.

While the difficulties of the extreme continental climate of Kazakhstan are appreciated, careful hardening off of the container-grown seedlings is expected to enable them to cope with the harsh conditions. If this technique proves to be successful, another container nursery will be established at Ertis Ormaney in 2009.

There is an additional sub-component that will be activated after the MTR, if still considered necessary. This is improvement to the site preparation process. Currently the debris left after salvage harvesting of the burnt forest is heaped by bulldozers, either into heaps and burnt away or pushed into windrows and left to rot. The project provides for the testing of rolling chopper units that shatter the debris and incorporate it into the surface soil, thus facilitating the operation of planting machines and also hastening breakdown of the debris and release of nutrients into the soil. Conservation of the slender nutrient capital of sandy soils in this way is essential to maintain productivity in the long term.

The project will also support a research and development program, including the appointment of an additional forest research officer at Semey, aimed at improving the survival of planted seedlings, so that the initial planting stocking can be reduced from the current 6000 per hectare, allowing more hectares can be planted with the same quantity of seedlings and helping to reduce the cost of reforestation. Overall, the various improvements in the various aspects of the reforestation program are expected to reduce the cost from the present U$220/ha to around U$180/ha. The research and development program will also explore ways of improving the success of direct sowing pine seed, for example, by encasing seed in pellets that carry mycorrhizal inoculum, fertiliser and an absorbent substance that will attract water to the vicinity of the seed and so aid germination. Once the seed production areas are fully established, and the seed supply position has improved, it is hoped that a regular program of direct sowing will commence, greatly increasing the annual rate of reforestation in the region, and also greatly reducing the cost to about $100/ha.

By a combination of improved technology for planted seedlings and direct sowing, the aim of the project is to develop the tools that will enable the FHC to reforest the entire burnt area in 10 years, rather than the 70 years that the current program will require.

The project will also include capacity-building activities such as short-term specialist advisers, training courses (for example, in contract management), study tours and workshops. The efficiency of forest administration will be improved by adoption of a flexible, performance-based budgeting system and by greater use of contractors.

Sub-component 1.b: Improve forest fire management and provide other forestry support in pine forest

A major activity in the project will be improving the fire prevention and fire suppression capacity of the two Ormandar. Direct fire prevention measures will include replacement of some old wooden lookout towers with new steel ones, and the addition of several more new towers to extend the fire detection network. Radio and patrol systems will be improved and extended and the firebreak network will be rejuvenated and regularly maintained. An expert review of radio Irtysh communication systems will be carried out. Some fire stations in the forest will be rehabilitated and additional hand tools, protective clothing and patrol vehicles provided. A GIS-linked forest fire management information system will enable better analysis of values at risk, provide up to date maps and a “live” inventory of facilities, personnel and equipment.

The project will also support several indirect fire prevention measures by providing much-needed employment in the forest to people in surrounding districts, as well as exploring avenues for creating new economic activities that will assist in relieving poverty. Alleviating poverty will be a key factor in reducing arson and illegal timber harvesting. The project will also fund a fresh approach to community education on fire prevention, involving awareness-building, stakeholder consultation and better coordination with local communities and other Government agencies, including cross-border agencies in Russia.

Fire suppression capacity will be improved by provision of funds for rehabililtation of 200 km of strategic roadworks to reduce the time for fire fighting equipment to reach forest fires. Equipment will be improved by the progressive replacement of obsolete fire trucks, the provision of more effective hand tools, better radio communications and the testing of a new approach to fire suppression, the use of light, high speed fast attack four wheel drive units. Fire management policies and procedures will be reviewed. International consultancies will assist in the development to "live" information systems and an Incident Control System to improve fire suppression capability. Staff fire management training will also be revised and updated, and the lack of young firefighters addressed through a training program. Capacity building will involve short courses, short term specialist advisers, workshops and study tours. Greater use will be made of prescribed burning, which serves the dual purpose of reducing fire hazards and providing training in fire behaviour for new employees. Limited support will be provided for fire research and publication of research results.

Forest Thinning. This sub-component will also include a program of thinning overstocked forest on strategically sited buffer zones through the forest. The intention of this activity is twofold. Firstly the buffer zones will provide zones where the fire hazard is reduced, and especially the "fuel ladder" between the ground litter and the tree crowns is removed. In such areas it will be possible to fight a major fire, as a fire will either not rise into the crowns, or, if it already in the crowns, it will tend to come down to the ground again. Once a fire moves from the litter into the crowns, the continuous fuel ladders formed from many small trees in a mixed age stand make control virtually impossible.

The second objective in the thinning program is to improve forest health. These forests have suffered extensive damage form a defoliating moth in recent years, and the damage has been exacerbated because the forest is generally overstocked. Overstocked forests, especially in a low rainfall area such as this, mean that the trees are under a high degree of moisture stress and this results in poor tree health, at which time that are more attractive to insects and more vulnerable to insect attack.

A by-product of the thinning program will be a continuous flow of wood products to the local timber market, which will help to stabilize local sawmills and other timber processing plants. This will be beneficial to the local economy and to local employment. The extent of the thinning program supported by the project is planned to be 1000 ha a year. The level of harvest from the operation is an order of magnitude less than the sustainable yield from that part of the forest estate zoned for productive uses. A more precise estimate of the proportion will be possible when the current forest inventory for the two Ormandar has been completed.

Pest and disease management in the Irtysh pine forest. A review has been carried out of the literature on past experience in the management of pests and diseases in the Irtysh pine forest.

The main pests and diseases have been identified and appear well known in Kazakhstan and in adjoining parts of Russia. There appears to be no current urgent pest or disease issue in the region. It is evident that severe pest and disease events are natural to the species across its vast range and they tend to be cyclic in ocurrence. In Kazakhstan, the recent pest and disease events have been exacerbated by the recent bad history of wildfires and poor forest health due to overstocking. There are thus no outstanding basic research issues to be addressed, although further development of field control measures, especially for defoliating insects, is required in the context of integrated pest management.

The issue of improvement in methods of direct control of pest and disease outbreaks will be addressed in several ways:

- A consultancy will be arranged to evaluate the opportunities for integrated pest management in the Irtysh pines, provide training to local forestry staff in IPM, assist them to develop an integrated pest management plan for the two Ormadar, and support the implementation of this plan.
- The project will support the development of a consultative mechanism with Russian forest managers in the region to promote an integrated regional approach to pest and disease management.
- Support will be provided for a suitable consultant to plan and implement a pilot demonstration of biological control of the pine defoliating moth using the natural control agent *Bacillus thuringiensis*.

The project will therefore support activities that will place the forest in a better condition to with stand periodic pest and disease events, improve the capacity of Ormaney staff to practice integrated pest management, provide a better pest management planning environment and provide a demonstration of biological control of an insect that should reduce the future use of insecticide in the Irtysh forest.

Radionuclide monitoring and mitigation. In addition, the project will support monitoring and any necessary mitigation activities to minimise the risk of radionuclide contamination resulting from project activities.

Sub-component 1.c: Forest Partnership Development

The project will explore the feasibility fostering of community incentives to reduce illegal logging and supporting improved livelihoods for people around the periphery of the two Ormaneys, in ways that link poverty reduction to improved forest management. This may include the devolution of the responsibility for management of certain areas of the Irtysh forest to communities, under some form of participatory forest management. In return for certain usufruct rights, yet to be determined, and the right to be employed for specified tasks in the nominated forest area, the community would assume responsibility for the protection and ongoing management of the area under some sort of lease agreement. The ownership of the land, as well as the management direction of the forest, would always remain with the FHC. This approach is seen as one possible avenue by which community involvement in forest management could reduce FHC management costs, fire risks and illegal activities, while gaining assured employment and rights for the associated community.

The Forest Partnership Development sub-component would establish two Social Forestry Support Teams to promote the participatory management concept, which would obtain input from international specialists to adapt the concept to Kazakhstan conditions and provide training

for core local staff. The specific framework for PFM will be developed during the first year of the project and then implemented, initially in 4 villages, and subject to confirmation during the mid term review, subsequently in 12 additional villages. As part of the PFM activities, the Support Teams would also assist local communities to explore and pilot alternative household livelihoods.

This sub-component would also include a feasibility study of forest processing industries utilizing reserve thinning in combination with production from oblast forests, and of other enterprise development opportunities in the processing and marketing of other forest products. The study would include a preliminary assessment of available resources and an evaluation of ways in which the resource might be made available to local processors. The feasibility study will help to determine specific requirements for followup technical assistance and training support

Component 2 Environmental Amelioration in Kyzyl Orda Oblast

Rationale:
The Kyzyl Orda Oblast, in the south western region of Kazakhstan, contains large areas of arid steppe vegetation used for pastoralism, and a major ecological disaster area, the drying Aral Sea. The rangelands are currently in good condition, apart from localised areas of degradation around settlements. Over the period 1990 to 2002, livestock numbers in Kazakhstan declined drastically, and this reduction in grazing pressure allowed the region to recover from a situation where the grazing pressure and resources were in a fine balance. With the changed political situation, and relief of pressure on the pastoral resources, the challenge is to work out resource-based, sustainable, approaches to rangeland management that are appropriate to the changing social and economic situation. It is important to do this before livestock numbers once again grow to the point where they could have a serious adverse impact on rangeland condition.

The rangelands are also the source of saxaul, which is a valued fuelwood. While traditionally used as fuel, it has been in increased demand over the past 14 years for fuelwood due to shortages of other energy sources, and has been overharvested over considerable areas. These energy shortages are now being progressively eliminated, but saxaul retains a strong attraction for cooking the traditional shashlik of the region. Consequently, there is a need for management intervention to ensure its sustainable management in the rangelands.

The Dry Aral Seabed (DAS) is a very large area, estimated to be some 4 million ha, of exposed former seabed that is currently a source of dust and salt transport to neighboring regions. Currently, the average annual total of particulate matter carried by wind from the Kazakhstan portion of the Aral coastal area is over 75 thousand tons per year, and there is satellite evidence of this dust blowing far beyond Kazakhstan's borders. However, the preparation team was unable to find evidence of adverse impacts of the dust, salt, and pesticide deposition on human health that could be used to justify the project. The poverty of the region, and associated deterioration of sanitation systems and water quality, complicates the interpretation of health data. Furthermore, the main sources of this dust appear to be from abandoned agricultural fields along the former coastline, and from the salt covered refractory (solonchak) soils of the DAS. To date, vegetation of the DAS at significant scales has not been feasible on the refractory soils, which cover at least 20% of the DAS. This topic requires further research. Natural and human-assisted vegetation is feasible on the portions of the DAS with sandy soils, but these are not a

major source of the salt and dust. However, it appears that vegetated areas on sandy DAS soils does help reduce wind erosion on a more localized scale.

There are good prospects, on the evidence of past research and more recent observations, that the DAS does have potential for future use, either as rangeland (with very carefully controlled livestock grazing) or as a biological diversity reserve, as flora and fauna diversity is steadily increasing with natural spread of existing vegetation in the area. Observation over the past few years suggests that, in the absence of any human intervention, the DAS will eventually cover itself with vegetation. However, the rate of expansion of the natural vegetation is slow and the problematic solonchak soils would require effective intervention if the whole area is to be covered with vegetation.

The role of this project on the DAS will be to accelerate the rate of development of a diverse and sustainable flora, to support a research and development effort that is expected to reduce the cost of these vegetation activities, and provide techniques that will address the solonchak soil problem. Project activities will be located mainly in the southern part of the former Aral Sea. They will not conflict with current activities aimed at partial recovery of the (now separate) northern part of the Sea.

Proposed Project Activities

Sub-component 2.a: Planting on the Dry Aral Seabed

Some vegetation establishment has taken place before 1990, with several former leskhozes being engaged in rasing seedlings of the salt-tolerant shrub/small tree Black Saxaul (*Haloxylon aphyllum*) in nurseries established for the purpose. Other species, such as Tamarix (*Tamarix* sp) and Sarasasan (*Halocnenum* sp) were also used on certain soil types. These nurseries have fallen into disuse and require refurbishment and expansion. A wider range of shrub and herbaceous species will be used in the new project to hasten the formation of new and more diverse flora ecosystem on the DAS.

The sub-component will commence with a two-stage mapping phase, the first stage using satellite imagery to map the vegetation cover on the entire DAS on the Kazakhstan side of the border with Uzbekistan. This will process will identify areas that are already satisfactorily covered with vegetation, areas of bare land newly emerged from the Sea and the area in between where active intervention is required. This activity will also provide a process for periodic monitoring of vegetative cover and permit an objective evaluation of the progress being made by the project. The second phase of the mapping will be a detailed soil survey of areas selected from phase one for field operations.

It is anticipated that the information from the first phase of broad-scale mapping will be shared with an adjacent GTZ Aral Seabed vegetation project in Kazakhstan, and the second phase detailed soil mapping will utilize a similar soil classification to that used previously by GTZ in its work on the DAS in Uzbekistan. A mechanism for ongoing coordination of field activities between this project and GTZ will be set up on project commencement. Opportunities for sharing facilities will also be explored.

The project will support the necessary seed collection activities, the refurbishment and upgrading of two nurseries in the Kazalinsk and Aralsk districts, and will employ staff of the SFEs to manage them. It will provide new equipment, based on that developed by GTZ in Uzbekistan for

site preparation on the DAS, support the development of a field station to facilitate field operations on the DAS and fund a new planting program. It will also provide the necessary nursery facilities to support a research and development program aimed at testing the practicality of using container-grown seedlings to widen the range of conditions under which planting operations can be conducted under the severe conditions encountered on the DAS, as well as exploring the potential for using pelleted seed for direct sowing of a range of species. The research program will support the appointment of an additional forest research officer at Kyzyl Orda to supplement research input from the Shchuchinsk research centre.

Table 4.2, below, sets out the expected level of planting that the project will achieve on the DAS. Note that while the project extends for 6 years, the seedlings raised in the 6th year are actually planted out in the 7th year.

Table 4.2 Expected Annual Area planted on the DAS (ha)

Year	2006	2007	2008	2009	2010	2011	2012
Area planted on the DAS (ha)	-	5,500	5,500	11,000	11,000	11,000	16,000
Area direct seeded (ha)	0	0	0	5,000	10,000	20,000	20,000

As with the R&D program in the Irtysh pine forests, the R&D program will attempt to develop new technologies that will reduce the cost and enable a great increase in the rate of afforestation. Direct sowing of pelleted seed offers that prospect. The research and development program will also address the problems associated with establishment of vegetation on the highly saline solonchak soils with the objective of achieving more rapid plant cover on those soil types.

Sub-component 2.b: Improvement of saxaul rangeland management

During the last fourteen years the saxaul lands have been over-exploited for fuelwood and, as a consequence, would benefit from rehabilitation and the implementation of sustainable management and harvesting programs. During the same period, the rangelands have been subject to lower grazing pressures because of the reduction in livestock numbers that occurred during the early to mid-1990s. However, there are recent increases in livestock numbers indicate that the relief of pressure on the rangelands is only short-term and the opportunity must be taken to demonstrate and implement resource-led and sustainable grazing management practices.

The key to successful implementation of sustainable rangeland management systems is the cooperation of local herding communities, Sustainable saxaul and rangeland management is therefore a social as much as a technical problem. Herder agreements will be used to enable restoration and development of degraded saxaul rangelands, community management of grazing pressure and maintenance of water resources. Two Rangeland Support Teams will be formed to identify participating herder groups, then facilitate the planning, organization, implementation, and monitoring of the activities in this sub-component by these groups. The Teams will use input from national and international specialists and will provide training to local management staff through workshops and study tours. The Support Teams will also assist with limited research activities on selection of valuable local ecotypes of fodder plants.

The project will demonstrate several options for achieving better management of the saxaul and pastoral resources of the rangelands. Thirty demonstration sites, each of about 200ha, will be set

up where it will be possible to engage herder communities in the rehabilitation planting of saxaul, the development of improved pastoral resources and the implementation of sustainable management of the resources. Each of these demonstration sites will be associated with an additional area of rangeland (from 2,500 to 7,500 ha) where sustainable resource-led grazing management practices will be implemented. Many of these grazing areas will be provided with wells to improve the spatial distribution of grazing. The total area covered by this component would be over 156,000 ha. Eight demonstration sites will be established in year two, ten in year three, and twelve in four.

The main activities required for this component are saxaul rehabilitation, range reseeding, grazing management, planning and supervision, participating user group organization and impact monitoring and analysis. Preliminary consultations with herders have established that there is community support for the project.

This sub-component raises issues relating to saxaul and rangeland usufruct rights that will have to be resolved at the outset of the project, and there is a legal covenant to this effect.

Component 3 Capacity Building of National Institutions

Rationale:
During the Soviet period, the FHC received much of its direction from Moscow, and as a result it has not yet develop much capacity to formulate policy and strategy. Since 1990, the FHC has suffered a drastic decline in staffing, as well as profound changes in its responsibilities. Much of the management responsibility for the Forest Fund has been transferred to Oblast forestry agencies. However, FHC retains the responsibility for direct management of national parks and other protected areas, as well as for forest inventory and planning, and supervision of standards in Oblast agencies. As a consequence of these changes, both the FHC agencies and State Forest Entities under the Oblasts (e.g. former leskhozy) have suffered a severe decline in staff skills and institutional capacity. Many experienced specialist staff members are nearing retirement and few young people are being recruited. While one reason for the poor recruitment rate may be that current salary levels for Government employees (which is outside the control of the FHC) are less than those offered in the private sector, the agency needs to adopt a positive approach to acquiring the skills it needs. Basic information facilities are also lacking, and the flow of information both within agencies and with external stakeholders is extremely limited. The lack of digitized data (both geographic data and other data essential for management such as equipment inventory) curtails the ability of FHC and other forestry agencies to make sound forest management decisions. FHC is in a rebuilding phase, in a still-evolving political environment, where the project can provide vital assistance in capacity building for both FHC and Oblast agencies meet the new challenges.

Proposed Project Activities

Sub-component 3.a: Improvements in policy, information, and human resource capacity

The approach in this sub-component is to assist capacity building by carefully selected upgrading of technology, or investments in new technology, where this is an appropriate action, by bolstering staff number in critical areas, and by targeted staff training to enhance needed technical skills.

Activity 1: Policy and public expenditure analysis.. A new group within FHC Astana, comprising two economists, a forestry specialist, and a facilitation/dissemination specialist, would undertake a range of policy, public expenditure and strategic studies throughout the six year project. They would receive advice and guidance from an international and a national specialist in organizational management throughout the project period, and would also receive advice from an international forest and land resource economist. They would undertake studies and consultation exercises on issues such as further articulation of a long-term vision (building on FAO's Forest Outlook Study for West and Central Asia), the organizational capacity required to fulfill this vision (including consideration of the potential for stimulating private sector investment in forests, staff succession issues, and of how roles should be allocated between staff, contracts, and other private undertakings), options in funding arrangements (e.g., national funding from oil revenue, forest product revenue, oblast revenue), and norms for flows of information both within the forestry agencies and with external stakeholders. This group would also undertake analyses on how budget and time service norms could be optimized to improve cost effectiveness, the saxaul harvesting policy, the policy implications of the participatory forest management being piloted in the Irtysh pine forest, and the economic valuation of forest resources (building on improved forest inventory data supported under the information facilities support described below). It would identify the need for amendments to the Forest Code. The group would pioneer the institution of public consultation processes in the development of some of these policies. This activity would also include participation in international workshops and conferences, as well as support for distance learning on issues such as illegal logging. Toward the end of the project the group would integrate key elements of the various pieces of analyses into National Forest Policy and Strategy.

Activity 2: Improve information facilities. The project build a Geographic Information System (GIS), and gradually begin to develop a Forest Management Information System. In addition it would equip FHC and other forest agencies with basic computer facilities. More specifically it will fund a consultancy on forest inventory and planning, a GIS design consultancy, improvement in field data collection procedures, provision of training, support additional specialist staff recruitment, provision of hardware and software for the GIS, and support temporary staff engaged on contract to carry out data capture. The project also provides support for remote sensing data, mapping, and field survey of forest areas. For project areas in Irtysh pine forests and in Kzyl Orda, this will facilitate the monitoring of results framework indicators (see Annex 3). Comparable support in remote sensing data, mapping, and field surveys will also improve the monitoring and evaluation of forest conditions in the Altai spruce forests and in other forest areas of Kazakhstan. The Kazleproekt group would also need to develop the necessary systems to ensure that all forest inventory data are spatially referenced, and integrated with the GIS. This will enable the powerful analytical capabilities of the system to be utilized, in areas both within and outside the immediate project, such as the Altay spruce and fire forests. The project also includes support in year three for the design of a larger agency-wide Forest Management Information System, and follow-up support for gradual FMIS data entry. In addition some 40 forestry offices will be provided with basic computer workstations, email/internet connections, and training, to improve the flow of information among forestry staff and with external stakeholders, and to enable the use of existing information for monitoring and decision making.

Activity 3: Human Resources Development. The project will support a consultancy on in-service training needs analysis for FHC and other forest-related agencies, including units under the Oblast administrations; and in coordination with the Ministry of Education, a consultancy to

review forestry education strategy and requirements. These will serve as first steps towards the preparation of a human resources development (HRD) plan. The project provides follow-up support for the implementation of this plan and even during the initial year or two of the project includes support for urgent training requirements. A full time training coordinator will help FHC to manage training program logistics. The international and national specialists in organizational management (see policy support described above) will help supervise the training needs assessment and the forestry education review consultancies, as well as the HRD plan consultancy. In year three they will also help to design and initiate a training of trainer program aimed at developing staff leadership skills and establishing a learning culture within forestry agencies, which will be essential for the implementation of the strategic changes arising from the policy support described above.

Activity 4. The project also includes support for detailed preparation of follow-on projects.

Sub-component 3.b: Competitive grant fund for forestry development

The project will also provide funds for grants, to be allocated on a competitive basis in years 2, 3, 4, and 5, for innovative forestry development subprojects in rural communities. The subprojects need not be confined to the areas where the other project activities are taking place, but can be anywhere in Kazakhstan. Possible areas that might be considered are establishment of model private plantations for timber production, community-based management of birch "islands" in the north of the country and a program to develop small scale cottage industries based on sustainable forest resources. Grant applicants may include non-government organizations, private businesses, lezhozes, research institutes, registered community organizations, etc. Most grants will vary in size from US$20,000 to over $100,000, although grants over $100,000 will be subject to additional review and approval procedures. The reason for the minimum size of US$ 20,000 is that the two grant program staff based in Astana would not be able to provide adequate oversight of large numbers of grants of less than $20,000. However, any given grant proposal may entail a program of mini-grants plus the associated administrative costs for organizing and monitoring that specific program. Using locally based NGOs, state forest entities, research institutes, or other organizations to administer subprojects of mini-grants, and incorporating the costs of this administration into the grant subproject proposals and allocations, will help to ensure that the mini-grants receive attention and oversight appropriate to the site-specific circumstances, and will also help to develop the institutional capacity of the organizations administering the mini-grant programs. A detailed operational manual, which is already available in draft form and will be approved by June 30, 2006, will guide the governing structure of the Grant Board; the solicitation, submission, review, and decisions on grant proposals; and the monitoring of grant implementation, outputs, and outcomes.

Sub-component 3.c: Project administration and management

While the Project Director has overall responsibility for the management of the project, this will be in addition to the normal duties of his position. A small Project Coordination Unit (PCU), located in the FHC headquarters in Astana, will assume responsibility for day-to-day management and report to the Project Director. The PCU will arrange the design, production and distribution of dissemination materials, including a website. It will also plan and implement regional review workshops to review project progress. The PCU will arrange socio-economic studies at MTR and project completion, covering an assessment of the benefits of the project,

impact on poverty reduction, impact on capacity-building and a re-assessment of project costs and benefits.

The PCU will comprise a group of suitably qualified and experienced personnel contracted for the period of the project. The staff of the PCU will work closely with the Directors of Ertis and Semey Ormandar to implement component 1, with administrative support of a three person Regional Project Office for each Ormaney. For Kyzyl Orda, an additional three person Regional Project Office under the regional Forest and Hunting Committee office would work closely with contacted lezhozes and the Rangeland Support Teams and to implement component 2, in coordination with staff of the Kyzyl Orda Oblast Natural Resource Department. The PCU will administer component 3 directly. Details of the implementation arrangements are set out in Annex 6.

Annex 5: Project Costs

KAZAKHSTAN: Forest Protection and Reforestation Project

Components Project Cost Summary	(USD Million)			% Total Base Costs
	Local	Foreign	Total	
A. Rehabilitation of Irtysh Pine Forests				
Reforestation	11.30	7.80	19.10	37
Fire Management and Other Forestry Support	6.64	7.19	13.82	26
Forest Partnership Development	0.58	0.56	1.14	2
Subtotal Rehabilitation of Irtysh Pine Forests	18.52	15.55	34.07	65
B. Environmental Amelioration in Kyzyl Orda Oblast				
Planting on the Dry Aral Sea Bed	3.63	2.55	6.18	12
Improvement of Management of Saxaul Rangelands	1.11	0.96	2.07	4
Subtotal Environmental Amelioration in Kyzyl Orda Oblast	4.74	3.51	8.25	16
C. Capacity Building of National Institutions				
Improvements in Policy,Legal,Organisational and Information Capacity	2.37	2.82	5.19	10
Competitive Grant Fund for Forestry Innovations	1.32	1.20	2.52	5
Project Management	1.71	0.45	2.17	4
Subtotal Capacity Building of National Institutions	5.41	4.48	9.88	19
Total BASELINE COSTS	28.67	23.53	52.21	100
Physical Contingencies	2.15	1.62	3.77	7
Price Contingencies	5.81	2.02	7.83	15
Total PROJECT COSTS	36.63	27.17	63.80	122

[1]Identifiable taxes and duties are US$m 12.2 and the total project cost, net of taxes, is US$ 51.6 m. Therefore, the share of project cost net of taxes is 19%.

Annex 6: Implementation Arrangements

KAZAKHSTAN: Forest Protection and Reforestation Project

Overview

The Forest Protection and Rehabilitation project will be implemented by the Ministry of Agriculture, through its Republican Forest and Hunting Committee (FHC). The project will operate in three distinct modes; firstly, as a direct line management operation to improve the capacity of the FHC to fulfill its role as the national forestry agency, and to upgrade its management of the Irtysh pine forests; secondly, as a delegated range management and environmental amelioration operation through the Kyzyl Orda SFEs; and thirdly, as a series of participatory activities through community groups. Some activities will also be funded by a competitive grants scheme. The implementation arrangements will therefore vary between project components.

Some of the proposed project activities are intended as pilots to test the applicability of some community based approaches to forest and range management under Kazakhstan conditions. These activities will require the formation of and ongoing support for resource user groups for the whole period of the project.

Administrative Roles and Responsibilities

The FHC will establish a Project Coordination Unit (PCU) at its Astana Headquarters to provide the central direction of the project. The Project Director will be the First Deputy Chairman of the FHC, who will provide general oversight of the PCU, in addition to his normal duties. The Project Director will be assisted by a Project Advisory Committee (PAC), comprising representatives of the principal stakeholders in the project and relevant international agencies.

The severe shortage of experienced staff in the FHC will make it very difficult for the agency to second its own staff to the PCU, so it will be necessary to contract a group of suitably experienced people to carry out this essential function for the duration of the project.

Day to day operation of the PCU will be carried out by a full time Project Manager, assisted by a Technical Advisor, 2 Procurement Managers, a Financial Manager, Accountant/disbursement assistant, an Administrative Assistant, an Information Technology engineer and a Translator. Other specialists, for example, for workshop facilitation and for web site design and maintenance, will be recruited on contract for shorter periods as required. A Grant Program Manager and a Grant Program Officer for the Competitive Grants Program will also be based within the PCU but work only on the grants program.

The PCU will be responsible for:

- preparation of annual activity plans for each component that will carry out the provisions of the Project Implementation Plan
- monitoring all project activities and ensuring that all activities are carried out efficiently and on schedule
- coordination of the preparation of periodic activity and financial reports as required by the World Bank, the Global Environment Facility (GEF) and the Government of Kazakhstan (GOK)
- all project financial management activities and arrange for auditing as necessary

- preparation of all tender documentation and ensure that procurement activities are in line with the provisions of the Project Implementation Plan and the various operational manuals attached to it
- operational level liaison with other GOK agencies that have an interest in various aspects of the project, and, in particular, with the German aid agency GTZ, which has a similar project in operation on the Dry Aral Seabed
- providing secretariat services for the PAC
- providing support for Bank supervision missions and liaison with Astana-based Bank staff

The PCU Project Manager and several of the other PCU staff will need to travel extensively within Kazakhstan to maintain effective liaison with those responsible for implementing on-ground project activities.

Three Regional Project Offices (RPOs), one in Semey Ormaney, one in Irtysh Ormaney, and on Kzyl Orda will provide additional administrative support in the field. Each RPO will be staffed by a Regional Manager, an Administrative Assistant/Translator, a Finance/Procurement Analyst, and a Research/Monitoring Analyst. RPO duties will include local administrative and logistical support for the project, local procurement, financial management, monitoring and analysis of project activities, local communications and coordination with relevant agencies and the public.

Arrangements for Project Implementation

Component 1: Rehabilitation of The Irtysh Pine Forest in Pavlodar and East Kazakhstan Oblasts

The management of the Ertis and Semey Ormandar, which are FHC subsidiaries, will implement the Irtysh component with administrative support from the PCU and the two Orman RPOs. . The Project Manager and regional managers will work in close cooperation with the two Orman Directors to develop an annual work program for the orderly performance of all the activities listed in the Project Implementation Plan. Orman Directors will be responsible for ensuring that all on-ground operations are carried out efficiently and within budget. The upgrading of the nursery system and the development of the container nursery will be carried out under a turnkey contract. Orman Directors will also arrange for appropriate planning studies to determine the locations of new and replacement fire lookout towers and determine local priorities for tower construction/replacement. They will also determine the priorities for road improvements and firebreak construction/maintenance on the basis of a wildfire threat analysis and an assessment of values at risk. They will implement local fire prevention educational activities and arrange for improved fire training for Orman staff. Orman Directors must ensure that new radio equipment supplied under the project is fully compatible with existing systems and meets their operational requirements.

The PCU, in consultation with Orman Directors, will arrange for consultancies outlined in the PIP. The PCU will also arrange for the establishment of a Social Forestry Support teams for each Ormaney, each staffed with a forester seconded from the respective Ormaney, a community mobilization specialist, and a business development specialist.

Component 2: Environmental Amelioration and Sustainable Rangeland Management in Kyzyl Orda Oblast

On the dry Aral seabed (DAS), the initial nursery and field establishment program will be implemented by two SFEs contracted by the FHC.. As the program develops, other SFEs are expected to become involved on a contract basis. Government research institutes will carry out the research and development program as well as the monitoring program. The PCU will arrange for the contracts, with administrative support from the RPO. The RPO will be housed within the FHC Kyzyl Orda Department. The FHC Department Head in Kzyl Orda and the RPO will coordinate with the Oblast Natural Resource Division and the SFEs involved with the project (the Director of Aralsk and Kasalinsk SFEs).

In view of the need for close links with the GTZ-funded DAS rehabilitation program that will also operate on the DAS, a DAS Coordination Committee will be established, comprising the Regional Manager, the FHC Kyzyl Orda Department Head, the Forestry Head of the Akimat Oblast Natural Resource Division, a representative of GTZ, and relevant research staff from the Shchuchinsk forest research centre. The Coordination Committee will plan joint activities where appropriate, promote sharing of resources and ensure free communication of ideas and results.

For the saxaul rangelands, two Rangeland Support Teams (each with a rangeland specialist and a community mobilization specialist) will mobilize local herders groups. The local herders will take the lead in implementation, with support from the contracted support teams, specialists, SFEs, and research institutes.

Applied Research and Development

Both the Irtysh pine reforestation and DAS revegetation sub-components have provision for support for research and development programs. These will be carried out by staff of the Institute for the Rehabilitation of Forestry at Shchuchinsk, in cooperation with other research institutes where appropriate. In consultation with the Director of the research centre and his senior staff, the PCU Project Manager will draw up an overall research plan for both regions, setting out:

- the testable hypotheses to be tested,
- the main lines of research to be carried out, and
- a schedule of activities over the period of the project.

The individual research officers involved will then draft detailed research working plans for each line of work and prepare annual work programs for the project investments in new research facilities at Kazalinsk and the Irtysh pine region, hire of local labour and equipment, etc. Local activities, such as hire of labour, will be carried out through the local forestry administration (Ormandar in the Irtysh pine region and the SFEs in Kyzyl Orda).

The research staff will carry out the agreed research programs according to international best practice procedures and will report annually on the progress of their work, with the reports being translated into English for the annual supervision mission.

Component 3: Capacity Building of National Institutions

This component will be directly administered by the FHC headquarters in Astana. The yearly work program of the policy unit will be determined by priorities set by the FHC, although the PCU will provide job descriptions and terms of reference to ensure that the range of staff skills and study topics envisaged by the Project Implementation Plan is achieved. Due to ceilings on

staff recruitment, the members of the policy unit will be contracted during the initial period of the project, but it is hoped that by the end of the project arrangements can be made for them to become permanant line positions.

The PCU Project Manager will consult with the Director of Kazleproekt to draft a work plan and schedule to implement the desired improvements in forest inventory field procedures, database management, GIS software and hardware acquisition and staff training, as well as the recruitment of temporary staff for digital data capture. The work plan will set out an orderly series of activities that will cover all these aspects so that each step is correctly timed to build on past achievements. A full time GIS coordinator will oversee the implementation of the plan. Kazleproekt will undertake the recruitment of temporary staff for the data capture activity. The PCU will arrange contracts for the remote sensing/mapping/survey work, but the data from these contracts will be housed within Kazleproekt. An information technology specialist based in FHC Astana will coordinate and oversee the implementation basic information technology support (e.g. basic workstations, email connections, and training).

The PCU will let a contract, through a tender process, for a training needs assessment for the entire FHC agency. It will use the outcomes from this assessment as the basis for a subsequent activity to prepare a HRD plan for the agency, to be carried out by specialised consultants. A contracted training coordinator will administer the implementation of the HRD plan. Contracted international and national specialists in organizational management will provide additional support.

Competitive Grants Scheme

A Grant Program Manager and a Grant Program Officer based within the PCU will administer the Competitive Grants Scheme in accordance with the provisions of an operations manual approved by a Grant Fund Board and the Project Director. The PCU will advertise for proposals in each of the years 2-5 of the project, receive proposals and arrange for a technical review by three specialists (one from a forestry agency, one from outside the government, and one international). The Grant Fund Board will review the proposals and the comments of technical reviewers, and award grants within the yearly allocation of grant funds. The final awards will be subject to no objection by the World Bank. All changes to grants during the course of implementation will also require the approval of the Grant Board and subject to Bank no objection. The PCU staff will disburse the funds in accordance with the agreed performance parameters and schedule outlined in the grant agreements, oversee compliance with fiduciary (procurement and financial management) requirements and safeguard frameworks (environmental and access restriction) where applicable, review progress reports submissions and undertake field visits to monitor implementation, and consolidate their findings into regular reports to the Board.

Monitoring and Evaluation

At one level, there will be monitoring of the results achieved through the reports prepared for the annual supervision mission and field inspections carried out by mission members. At a more broad-scale level, the vegetation cover and condition for the whole of the Dry Aral Seabed within Kazakhstan will be assessed during 2005, using satellite imagery. This assessment will provide maps and area statements that will serve as a baseline against which to judge the success of the project on the ground. This assessment will be repeated mid-term and completion of the project, using the same methodology, so that progressive evaluations of progress can be made. A

similar exercise will be carried out for the Irtysh pine forests and the Kyzyl Orda rangeland components of the project. Where necessary these assessments will be accompanied by ground surveys. In addition to this mapping, a socioeconomic evaluation will be undertaken at mid term and completion. See Annex 3.

Annex 7: Financial Management and Disbursement Arrangements

KAZAKHSTAN: Forest Protection and Reforestation Project

An assessment of the financial management arrangements at the Forest and Hunting Committee (FHC) of the Ministry of Agriculture will be undertaken during appraisal, to determine the status financial management arrangements, and to monitor the process of strengthening the financial management system (FMS) in readiness for the proposed project. These financial management arrangements include systems of budgeting, accounting, financial reporting, auditing, and internal controls. The FHC will design a computerized accounting system, using an appropriate accounting software, that meets the requirements of the World Bank and Government financial regulations.

The FHC will have adequate compliment of project staff, including Project Director, financial manager, and an accountant/disbursement specialist. A financial management consultant is being hired under the PHRD grant to design the system, while the PCU Accounts Assistant is providing necessary support during project preparation. A financial management system that meets requirements of the World Bank and the Government will be in place by Board Presentation.

Implementation Arrangements.

On a day to day basis, project activities will be implemented by the Forest and Hunting Committee of the Ministry of Agriculture, through a Project Coordination Unit consisting of dedicated, full time staff under the leadership of the Project Director. The staff will include a Project Manager and specialists in Procurement, Financial Management, , Information Technology and research/statistics , as well as administrative staff. The vegetation of the Dry Aral Seabed and rangeland management sub-components will be administered by a smaller Regional Project Office located in Kyzyl Orda, who will work in close cooperation with the Oblast Forestry Department and local SFEs.

The FHC will be responsible for developing and updating the consolidated Project Implementation Plan, ensuring that project activities are implemented according to the legal documents, procurement plan and operations manual, reporting on project progress to the Project Advisory Committee (PAC), and the World Bank, ensuring that procurement of goods and services is done in a timely manner and in accordance with World Bank guidelines, managing project funds, maintaining accounts, getting the accounts audited, ensuring adequate budget provisions for the project in the national budgets, facilitating the work of consultants, and reviewing consultant outputs.

Strengths and Weaknesses.

Staffing of the Accounting/Finance Function

The FHC finance unit will have a financial manager and accountant /disbursement specialist. The financial manager will be responsible for all aspects of the financial management and accounting, including managing the special account. S(h)e will be assisted by a suitably qualified accountant/disbursement specialist who will be responsible for disbursement functions, as well as project accounting - maintaining books of accounts, reporting day-to-day transactions and preparing accounting reports and financial statements, as well as monitoring financial flows to the project. The financial manager will be involved in the budget preparation for the project and have primary responsibility for the quarterly financial reports (FMR), and prepare annual financial statements for audit. The financial manager will also manage an effective system of internal control, ensuring adherence to established financial procedures, and safeguarding the resources and assets of the project. It is envisaged that staff

will need training on World Bank financial management and disbursement requirements, preferably in regional training programs.

Accounting and Internal Control Systems

The FHC FM staff will be expected to gain some experience with the PHRD financed preparation activities, and will establish key internal control mechanisms in the application and use of funds. The financial procedures manual, to be developed for the project by the financial management consultant, will reflect the FHC structure as well as the flow of funds to support project activities. Accounts and records for the project will be maintained by the FHC which will operate and maintain a financial management system (FMS) capable of generating Financial Monitoring Reports (FMR) in accordance with formats to be agreed with the World Bank. Books of accounts for the project will be maintained by the FHC based on International Standards on Accounting (ISA). The financial manager will be responsible for overall project financial management, maintenance of books and accounts for the project, preparation and dissemination of financial statements and FMR, and timely audits of the project. The FHC will generate and maintain accounting vouchers and supporting documentation for expenditures on all activities of the project, and will document the accounting transaction information flow. Funds will be transferred from the Special Account to pay for eligible expenditures in accordance with the Loan Agreement.

Financial Monitoring and Reporting.

Quarterly Financial Management Reports (FMR), including Financial Statements, Physical Progress Reports and Procurement Reports, in formats acceptable to the World Bank, will be generated from the financial management system within 45 days of the end of each quarter. The first quarterly FMR will be submitted after the end of the first full quarter after disbursements commence. Formats of the annual financial statements and the FMR will be incorporated in the financial procedures manual. The FMR include: (a) Project Sources and Uses of Funds, (b) Uses of Funds by Project Activity, (c) Output Monitoring Reports, (in Tables and Narrative form), and (d) Procurement Reports. The project accounting software will generate FMR, incorporating all components, categories and performance indicators which are acceptable to the World Bank. Sample reports be produced, based on the PHRD grant and will be reviewed by the Bank before negotiations.

Planning and Budgeting.

The FHC will prepare annual budgets in line with the Procurement Plans, and these budgets will form the basis for spending and requesting funds from the government for counterpart contribution. These budgets, prepared in accordance with the FMR format (disbursement categories, components and activities, financial sources, account codes, and by quarter), will establish physical targets to ensure linkage between expenditures and physical progress, and proper comparison between actual and budgeted performance. Review of actual results against the budget will be a key managerial tool for monitoring financial performance of the project. The financial procedures manual will prescribe the appropriate manner for preparing budgets to satisfy the government and World Bank requirements. A detailed budget for the first full year of project implementation, broken down by quarter, will be prepared before the loan becomes effective.

Audit Arrangements

There will be comprehensive annual audits of the project financial statements, covering all aspects of the project. The audits will be performed by independent private sector auditors acceptable to the World Bank, and in accordance with International Standards on Auditing (ISA), and the World Bank's guidelines on auditing as stated in the guidelines: *Annual Financial Reporting and Auditing for World Bank-financed Activities* (June 2003), and other guidance that might be provided by the World Bank from time to time. The auditors' terms of reference (TORs) will be prepared by the FHC and cleared by the Bank before the engagement of the auditor. They will include both the audit of financial

transactions and an assessment of the operation of the financial management system (FMS), including a review of the internal control mechanisms. The annual audit reports will be in a format in accordance with ISA and World Bank guidelines, and they will include a single opinion on the financial statements of the FHC, incorporating the project financial statements, including Special Account Reconciliation, and SOE Withdrawal Schedule; as well as a Management Letter. The audit reports will be submitted to the Bank not later than six months after the end of the fiscal year to which they relate. The cost of the audits will be eligible for financing from the loan, unless otherwise agreed with the Borrower. The FHC will provide the auditor with full access to project-related documents and records and with the information required for the purpose of the audit. Sample TORs for project audit will be included in the Financial Procedures Manual.

Disbursement/Flow of Funds Arrangements

The proceeds of the loan will be disbursed over a period of …… years, or for such longer period as will be agreed with IBRD. Loan funds will initially flow to the project via disbursements to the Special Account (SA) opened by the Borrower. Disbursements will follow either transaction-based method, i.e., the traditional Bank procedures (reimbursements with full documentation, Statements of Expenditure (SOEs), direct payments and special commitments) or report-based (disbursements based on quarterly FMR). Determination of method of disbursement will depend on assessment of the financial management arrangements of the FHC. Under transaction-based disbursement withdrawals from the Loan Account will be requested in accordance with the guidance provided in the Disbursement Letter. Withdrawal applications may be signed by an authorized representative of the Borrower, or the Project Director, with written delegated authority. The Financial Manager will ensure completeness and accuracy of all withdrawal applications and will append her/his signature as part of the internal control procedures.

For report-based disbursement, i.e., disbursements on the basis of FMR, flexibility will be built in, and the balances in the Special Account will fluctuate with expenditures forecasts. There is no requirement for ceiling or authorized allocation as long as the periodic forecasts are reasonable, the project has good controls over the use of funds and periodic reporting is adequate and timely.

FM Action Plan to be agreed with FHC

Given that the financial management arrangements have not been assessed a draft time-bound action plan has been developed and will be discussed with FHC during appraisal. The action plan will be updated and agreed with the Borrower during negotiations. Successful implementation of the action plan will ensure establishment of financial management system that meets requirements of the World Bank, that should be in place by Board.

ACTION PLAN
FINANCIAL MANAGEMENT SYSTEM

Date: January 12, 2005

	Action	Responsibility	Due Date	Remarks
1.	**Financial Management Procedures described in FM Manual:** • Fully documenting the following procedures: budgeting, accounting and internal control, including description of the accounting system and books of accounts, disbursement and flow of funds (including chart), financial reporting, including FMR, annual reports and audit. • Present the final draft Manual to the Bank for review. • Finalize the Manual incorporating Bank comments.	FHC	Draft Manual should be ready by Negotiations, and Final document Before Board Date.	The manual will be developed by FM consultant to be hired under the PHRD grant, and will be subject to review by the Bank. It is expected that a revised final draft will be available for Bank review before Negotiations.

	Action	Responsibility	Due Date	Remarks
2.	**Establish Project Accounting and Financial Reporting System** • Develop project accounting system, including design of Chart of Accounts, capable of generating FMR. • Provide appropriate training to the FHC financial manager, accountant/disbursement specialist and procurement specialist on application and maintenance of the installed system. Test the accounting and financial reporting system. • Produce Draft FMR, based on PHRD grant, for submission to the Bank for review and comments. NB: Financial Monitoring Reports to be generated by the automated accounting system.	FHC FHC	By Board Before Board	Draft TOR for the financial management design consultant have been developed, and the consultant is expected to complete the key tasks by April 2005. The system is expected to be up and running by Board. Sample reports to be based on activities under the PHRD grant, will be reviewed by the Bank prior to Board. Format and content to be agreed during negotiations.
3.	**Staffing of the FM Unit** • Recruitment of Financial Manager and Accountant/Disbursement Specialist	FHC. TOR to be developed by the consultant.	By Negotiations.	**Ideally the FM and Accountant/Disbursement Specialist should be hired early to participate in the development of the project accounting system.**

Financial Management Supervision Plan. The Bank will conduct risk-based financial management supervision, at appropriate intervals, to monitor progress of project implementation. The financial management supervision will pay particular attention to: (i) project accounting and internal control systems; (ii) budgeting and financial planning arrangements; (ii) review of project's financial monitoring reports; (iii) review audit reports, including financial statements and remedial actions recommended in the auditor's Management Letters; (v) review of implementation of progress; and (iv) disbursement management and financial flows, including counterpart funds, etc.

Financial Covenants. The borrower will maintain an adequate financial management system and furnish to the World Bank quarterly Financial Monitoring Reports, including financial statements, physical progress reports and procurement reports. Independent external auditors would will periodically and annually audit the project activities, including financial statements, the Special Account, Statements of Expenditures (SOE), or FMR, if used for disbursement purposes, under terms of reference acceptable to the World Bank, and submit the audit reports to the Bank as appropriate. Annual audited financial statements will be submitted to the Bank not later than six months after the end of the fiscal year.

Annex 8: Procurement

KAZAKHSTAN: Forest Protection and Reforestation Project

A. General

Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement Under IBRD Loans and IDA Credits" dated May 2004; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, and the provisions stipulated in the Legal Agreement. The general description of various items under different expenditure category are described below. For each contract to be financed by the Grant, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank project team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

Procurement of Goods:

Goods identified for procurement at the time of appraisal include nursery equipment, seed processing machinery, vehicles and fire fighting equipment, IT hardware and software, radios, and tractors.. The procurement will be done using Bank's SBD for all ICB and appropriate standard bidding documents for NCB, which shall contain draft contract and conditions of contract acceptable to the Bank.

Procurement of Works:

Procurement of the civil works under this project will be done using the Bank's Standard Bidding Documents (SBD) for all ICB and appropriate standard bidding documents for NCB, which shall contain draft contract and conditions of contract acceptable to the Bank.

Selection of Consultants:

Consultant services to be procured under the Project include: technical assistance for updating the forest inventory system, database design, nursery operation, feasibility of timber processing developments, development of pilots for participatory forest management, training needs assessment, human resources development, exploration of alternative employment in the vicinity of the Irtysh forests and training in a number of technical areas._____: Short lists of consultants for services estimated to cost less than $100,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Procurement of non-consulting services:

Technical services under the project will be procured in accordance with the appropriate bidding documents, which shall contain draft contract and conditions of contract acceptable to the Bank.

Others: The Implementing Agency will delegate the execution of procurement activities within …the Dry Aral Seabed and Rangeland .sub-component to the proposed Regional Project Office in Kyzyl Orda The amount of annual grants will range up to …?…….per sub-project. Subprojects implemented under the Community Grants Scheme will follow procedures detailed in the Operations Manual. Procurement under …?…. will be based on Community Participation Procurement (CPP) as described under para. 3.17 of the Procurement Guidelines (May 2004).

The exact scope of works and goods to be financed will depend on the results of the subproject identification process by …?…….

Operational Costs:

The project will finance the following for the _Project Coordination Unit and the Regional Project Office_____: Office supplies, office rent, utilities and communications, travel and subsistence, and vehicle fuel and maintenance costs. The _PCU and the RPO __ will prepare an annual budget to be agreed with the Bank.

B. Assessment of the agency's capacity to implement procurement

An assessment of the capacity of the Implementing Agency to implement procurement actions for the project has been carried out by Mr. Naushad Khan, Lead Procurement Specialist and Mr Nurbek Kurmanaliev, Procurement Analyst on January 5, 2005.
Procurement under the project will be conducted by the Forestry and Hunting Committee of the Ministry of Agriculture in accordance with the Bank procurement guidelines. The Committee will have overall responsibility for procurement under the project.

An assessment of the capacity of the Implementing Agency to implement procurement actions for the project has been carried out by Mr. Naushad Khan, Lead Procurement Specialist on July 2, 2004. The assessment reviewed the organizational structure for implementing the project and the interaction between the project's staff responsible for procurement. The assessment found that the Implementing Agency has not enough capacity to conduct procurement for the purposes of project implementation.

Most of the issues/ risks concerning the procurement component for implementation of the project have been identified and include:

(i) Government officials, who would be involved in project procurement through Tender Committees may not be familiar with procurement procedures;
(ii) The bureaucratic system creates opportunities for informal interference in procurement process by senior officials;
(iii) The above mentioned risks would be a basis for delays of the procurement processes;

The corrective measures which have been agreed are:

Thresholds for Procurement Methods. It is recommended that the following thresholds be applied under this project:

Procurement Method	Threshold
ICB: Goods	>US$100,000
Shopping: Goods	<US$100,000 per contract
NCB: Works	<US$300,000
Shopping (Works)	>US$50,000
Quality and Cost Based Selection	>US$100,000 per contract

(QCBS) for Consultant Services	(International shortlist) <US$100,000 (National shortlist)
Selection Based on Consultants' Qualifications	<US$100,000 per contract

Suggested Thresholds for Prior Review

Taking into account high risk rating the following procurements are subject to prior review by the Bank:

a. All contracts awarded through ICB (estimated to cost more than US$100,000)
b. First NCB contract for works (estimated to cost less than US$300,000)
c. All TORs for consulting services, irrespective of the contract value
d. Contracts with consulting firms (≥US$100,000) and contracts with individual consultants (US$25,000) or more
e. Single source or direct contracting is a subject to justification

The above thresholds can be subject to revision as the project implementation progresses and Committee has acquired higher procurement capacity.

Procurement Plan

The Borrower, at appraisal, developed a Procurement Plan for project implementation which provides the basis for the procurement methods. This plan has been agreed between the Borrower and the Project Team on [*date*….] and is available at [*provide the office name and location*] It will also be available in the Project's database and in the Bank's external website. The Procurement Plan will be updated in agreement with the Project Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

C. Frequency of Procurement Supervision

In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended once a year supervision missions to visit the field to carry out post review of procurement actions.

Details of the Procurement Arrangement involving international competition.

Goods and Works and non consulting services.

(a) List of contract Packages which will be procured following ICB and Direct contracting:

1	2	3	4	5	6	7	8	9
No.	Contract Description	Estimated Cost	Procur Method	P-Q	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date	Com ments
1								
2								

3								
4								
5								
6								

(b) ICB Contracts estimated to cost above US$100,000 per contract and all Direct contracting will be subject to prior review by the Bank.

Consulting Services.

(a) List of Consulting Assignments with short-list of international firms.

1	2	3	4	5	6	7
No.	Description of Assignment	Estimated Cost	Selection Method	Review by Bank (Prior / Post)	Expected Proposals Submission Date	Comments
1						
2						
3						
4						
5						
6						

(b) Consultancy services estimated to cost above US$50,000 per contract and Single Source selection of consultants will be subject to prior review by the Bank.

(c) Short lists composed entirely of national consultants: Short lists of consultants for services estimated to cost less than US$100,000 equivalent per contract, may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Annex 9: Economic and Financial Analysis

KAZAKHSTAN: Forest Protection and Reforestation Project

Introduction

The principal benefits of the proposed project are environmental and institutional and not readily quantifiable. Environmental benefits include potential direct usage through the extraction of products that can be used personally or commercially. They also include the value of non-extractive uses such as recreation "amenity values" by those who visit or potentially wish to visit the resource sites. This use includes the value of the resources for their contribution to the prevention/mitigation of adverse environmental hazards (soil erosion, wind-borne dust and carbon sequestration.

Also, among the values ascribed to the environmental resources of concern to the Project is their existence value: the value that people ascribe to the fact that the resources exist and to maintaining their continued existence. Institutional benefits include lessons of improved transparency of public financial management and public accountability, local participation, private sector development, socio-economic services for local communities; these lessons should be transferable to areas of governance and state management other than forest resources. To the extent that extractive benefits can be quantified, it can be shown that field activities supported under the Project do not imply net costs to the economy. In the cases of the Irtysh pine rehabilitation and the improvement in the management of saxaul rangelands, the investments generate strictly positive returns.

Non-quantified Environmental Benefits. It was not feasible in the scope of the preparation of the Project to determine amenity values for the Irtysh pine forests, which are far more likely to give rise to such values than the dry Aral seabed (DAS) or the saxaul rangelands. The management regime governing the ormandar as reserve forests is a relatively recent event. From the social assessment carried out for the preparation, however, it is evident that local and regional populations have in the past derived appreciable amenity uses of the Irtysh forests.

The existence value of the forest resources covered by the Project has also not been quantified but it is again evident that as a matter of State concern that the areas under forest in the north east of Kazakhstan should not continue to deteriorate. The size of the Kazakh forests is large in terms of its absolute area in comparison to the forested areas of many other countries but the area is a relatively small fraction of the total land area of Kazakhstan itself. Despite the immense importance of Kazakhstan's petroleum and natural gas resources to the economy, the condition of forest resources has its consideration in the report on the State of the Republic, and the preparation of this Project, including the possible implications for the Republican budget, was a matter debated and ratified by the National Congress.

It can be asserted safely that the amenity of value of the DAS, actual or potential, is nil or nearly nil; although this conceivably might change in the future. The determination of the existence value of vegetation of the DAS is problematic but considered to be significant. The DAS component will result in the extension of a habitat (characterised by the distribution of saxaul) prevalent in the lower southwest of the country. More precisely, the action will accelerate the development of this habitat onto remote areas of the DAS by many decades and in so doing provide a safeguard in the event of worsening habitat conditions in the southwest.

The saxaul range sub-component is similar to the Project's DAS activities in the sense that its fundamental role is to promote the preservation of Kazakhstan's southwest desert ecology and its biodiversity. Unlike the DAS, however, the saxaul areas presently provide concrete economic

opportunities through animal husbandry or the extraction of saxaul wood. These opportunities provide the possibility of developing a strategy linking economic incentives to the larger objective of preserving the region's existence (biodiversity) value.

Quantified Analysis of Project Components

Quantifiable Benefits: For each component of the Project it is possible to derive benefits based on actual or potential extractive uses of the resources concerned.

- For the Irtysh pine forests, potential timber production from replanted areas, timber from thinned areas and the avoidance of the loss of forest resources through improved fire management have definable economic values. Although the extraction of saxaul wood from the DAS may never occur, the potential sustainable harvests of wood from the areas assisted under the Project can be estimated.
- For the saxaul rangeland area sub-component, it is possible to define benefits arising from animal husbandry and the sustainable extraction of saxaul wood from areas protected under the range management agreements established with local herding households. An economic analysis of the Project's field activities was undertaken to demonstrate that the use of the Republican budget and foreign borrowing can generate quantifiable economic benefits that imply no net burdens upon the economy.

General Parameters:

◊ Period of analysis: 90 – 120 years to realize impacts of the project and longer-term targeted activities.
◊ Basis of accounting: border prices
  - Taxes are excluded
  - Domestic value content of costs and benefits (excluding foreign exchange content) are converted to their equivalent border values using a Standard Conversion Factor of 0.85.
◊ Base year of accounting: December 2004 constant values.
◊ Casual labour is valued at KZT 530 or US$ 4 per day.
- The economic cost of capital is considered in general to be ten percent

	Rehabilitation of Irtysh Pine Forests	Planting on the Dry Aral Sea Bed (DAS)	Improved Management of Saxaul Rangelands
Costs	Planting costs: ˜ US$ 240 per hectare. Included in the analysis are • Investment and recurrent costs for seed collection areas • Seed station facilities in Semey Ormany • Improved nurseries in both ormandar. Thinning costs of about US$ 40, 80 and 200 per hectare for the first, second and final harvest of plantings (in years 25, 60 and 90 of planting; the year of planting reckoned as year 1). Average costs for cleaning forest over-growth of about US$ 85 per hectare. Forest fire management costs include the costs of implementation in Semey and Erits Ormandar and the institutional strengthening costs of forest management; recurrent costs of about US$ 144 000 for the Semey Ormany and US$ 135 000 for the Ertis Ormany following the completion of the Project. Costs of the forest partnership development sub-component are excluded.	Costs include investments and operations of the Kaukei and Amantakol nurseries, the outfitting of planting teams, road improvements and planting costs. At full development, establishment costs are proximately US$ 55 per hectare, including the planting of seedlings and direct sowing. Total economic costs for the sub-component amount to about US$ 4.6 million over the period of implementation; recurrent economic costs amount annually to approximately US$ 1.4 million. The expenditures for the Kazalinsk research station are not included in the analysis.	Total economic costs for the sub-component are estimated at US$ 1.7 million over the implementation period of the Project, including the costs of technical assistance and other support.
Benefits	Reforestation benefits derive from products obtained in two thinnings and final harvest (as long as the the current regulations for ormandar continue this final harvest is hypothetical). The scheduled thinnings and harvest produce fuelwood, small wood and timber. The first thinning in year 25 of planting produces about 25 cubic metres of fuelwood (assuming the recommended stocking of the replanted areas and realisation of desired survival rates. The second thinning in year 60 of planting producing about 18 cubic metres of fuelwood and 42 cubic metres of small wood. The final harvest produces about 24 cubic metres of fuelwood, 46 cubic metres of small wood and 160 cubic metres of timber. Forest cleaning produces about 30 cubic metres of fuelwood and 20 cubic metres of small wood per hectare. The economic values used for fuelwood, small wood and timber are approximately US$ 9.5, 15 and 138 per cubic metre; the timber value is an average based on the reported value of trade of pine at the border of Kazakhstan with China and an import parity price for similar pine woods marketed in Europe. The benefits of fire management derive from avoiding the loss of about 25 percent of the area that is expected to be lost to fires in the future	Quantified benefits consist of the hypothetical regular sustainable harvest of saxaul wood from the vegetated areas; the yield of the harvest is approximately 3.5 cubic metres per hectare every thirty years. To account for accelerated natural regeneration in open areas interspaced within the areas vegetated through Project activities, in the analysis the areas under vegetation expand by 50 percent thirty years within thirty years of initial interventions; natural regeneration is expected to proceed far more slowly in the absence of the vegetation activities. The value of the saxaul wood harvested is estimated at US$ 28 per cubic metre; this is an average stumpage value based on rural and urban markets in Kazakhstan.	Benefits based mostly on increased incomes from livestock holdings for participating herding households but also on the value of hypothetical sustainable harvests of saxaul wood from the Forest Fund areas falling under improved management at the pilot sites. Gross livestock incomes increase by 20 % in the analysis; the increment in net income is estimated at US$ 2 800 per herd. The average herd size on which benefits are based is estimated at about 130 animals (cattle, sheep and camels.) The analysis estimates total benefits on the basis of 2.5 herds / pilot site; in total 75 herds are expected to benefit from Project interventions. The analysis estimates a hypothetical, sustainable harvest of about 3.5 cubic metres of saxaul wood per hectare every thirty years from the 6 000 ha of Forest Fund land falling under the management scheme the pilot component; in the absence of the Project there

	Rehabilitation of Irtysh Pine Forests	Planting on the Dry Aral Sea Bed (DAS)	Improved Management of Saxaul Rangelands
	without the project; this amounts to about 260 hectares each year of avoided area lost to fire. The value of the area lost to fire is approximated at 75 percent of the value of a reforested area at the time of final harvest.		is no sustainable harvesting.
Scale and Phasing	Reforestation costs and benefits are based on the planting and sowing of 41 000 hectares in the course of project implementation and a continued annual reforestation programme of 23 000 hectares until the year 2020 following project completion (in reflection of the results framework for the Project; although, the recurrent investments do not fundamentally alter results of the analysis). This area is incremental to the areas that are expected to be established in the future under current forest programmes. Reforestation builds gradually starting from the second year of the Project with the establishment of 1 000 hectares; 2000 hectares are established in the second year of the Project; 4 000 hectares in the fourth year; 10 000 hectares in fifth year; the reforestation programme is operating at full capacity at 23 000 hectares in the final year of the Project. Each year the ormandar clean (thin) 1 000 hectares of overgrown forest area.	Vegetation of the DAS begins in the year 2007 following investments in nurseries and the outfitting of planting teams at a rate of 5 500 hectares/ year. Expansion of the establishment of vegetation occurs in the fourth year of Project implementation after an expansion of nursery production and through direct sowing; vegetation of the DAS expands from 16 000 ha in the year 2009 to 31 000 ha in year 2011. The vegetation programme continues through the year 2020 (in total fifteen years of activity, including the period of project implementation) at an annual rate of 31 000 hectares. These areas are incremental to targets under current forest programmes; in recent years planting on the DAS has been negligible.	Community mobilisation and the installation of works are expected to occur over three years starting from the second year of the Project; the first Project year will be devoted to planning and preparation. The thirty pilot sites are expected to be established in this phasing: eight sites in the second year of the Project, ten in year 3 and twelve sites in year 4.
Out-comes	The economic rate of return to reforestation is about 5%. Forest cleaning yields an annual profit of several hundred dollars, which could be used to increase the annual work programme (not presented here); financially, the operation could also offset reforestation costs (impact shown here). The total return to reforestation and forest cleaning combined is about 5.5 percent; a doubling of the areas thinned each year could raise this ERR to about 6 %. The ERR to fire management is estimated at 37%. The overall quantified economic return to the rehabilitation of the Irtysh pine forests is about 10 %.	The return to planting on the DAS is estimated at about 4 percent.	The total net incomes of households managing approximately 75 herds on rangelands associated with the 30 pilot sites increase by about US$ 2 800 per herd. Sustainable harvests of saxaul wood are possible over 6 000 hectares. The return to is estimated at 11 percent.

Employment Benefits and Impacts on Poverty

Employment: Over the implementation period the project will generate about US$ 5 million in seasonal wage labour, which represents about 1.2 million workdays. Of this sum, about 340 000 days of employment would be provided in total by the Project's Aral Sea activities. Up to 6 000 households may benefit from this employment in the Irtysh pine region. In Kyzyl Orda, taking into account the very limited season for field works, planting on the DAS may provide employment for up to 4 500 households. Following the completion of the Project a continuation of field activities can be expected to provide annually about 630 000 days of seasonal employment. Some of this employment will occur in the nurseries but for the most part this employment will be generated by the reforestation works, including forest cleaning, in the Irtysh pine forests.

Poverty Impacts: The poverty level of income for Kazakhstan is estimated at US$ 1737 (average annual household income) in 2003 and the absolute poverty line of income is US$ 868 (one half of poverty line of income). For the project area of Eastern Kazakhstan, the poverty level of income is US$ 1561, in 2003, and for the project area of Kyzyl Orda it is US$ 2275 in 2003 (average annual household income).

In 2003 about 28% of the population had incomes below the poverty level in the rural Irtysh region and 42% were below the poverty level in the rural Kyzyl Orda region. Average annual household income has recently improved in the Project regions, but poverty remains prevalent. Although average annual household income in the Irtysh region is 1.37 times above the poverty level, 28% of the population have incomes below the poverty line in the rural Irtysh region. In the Kyzyl Orda region average household incomes are 1.06 times above the poverty level and 42% of the population fall below the poverty line. This reflects a skewed distribution of income in the project area and between rural and urban areas.

There are 125 882 people (51% female) and approximately 36 000 households (9% headed by women) in the Irtysh Project area, comprising Pavlodar and East Kazakhstan regions. From published statistics, the number of households having incomes falling below the poverty line amounts to about 10 000. The Project can potentially benefit about 60 percent of these households if employment were directed towards households in most of need.

In the Kyzyl Orda Project area (Kazalinsk and Aral'sk regions) the population is approximately138 092 (49% female) with approximately 24 600 households (8% headed by women). The number of households currently having incomes falling below the poverty line is estimated at approximately 10 300. The Project can potentially benefit about 40 percent of these households if no more than one person per household participates in planting activities. The benefit per household in terms of incremental cash income, however, would not be very significant unless more than one person per household were to participate in employment

The saxaul range management activities are expected to increase the annual incomes of herd owners by about US$ 2 800. The likely number of households that would benefit from this sub-component cannot yet be determined due to insufficient data. Depending upon the number of households involved in the management of each herd, the benefits accruing to each household can be substantial. If on average six households own equal shares of a herd, the increment in income per household would amount to about US$ 470, which, for a household at the poverty line would represent an increase in annual income of over 20 percent. Further analysis of

incentives for households will be undertaken in the first year of the Project as part of the work programme of this component.

Carbon Sequestration Benefits

Carbon Sequestration Benefits: Although the metabolism of the vegetation established or rehabilitated under the Project is low, the Project's field activities will lead to increased sequestration of carbon. In the case of Irtysh pine forests, the re-establishment of forest areas will have an obvious impact. Improved fire management under the Project will avoid releases of carbon into the atmosphere that otherwise would have occurred, given the current trend of forest losses due to fires. On the DAS, some vegetation is establishing itself naturally in some areas but the process is slow and uneven. In general, the implementation of the Project should move forward the accumulation of a carbon pool in the region by many decades.

Saxaul areas: For the Saxaul areas that are a part of the sub-component targeting improved range management, the balance of carbon sequestration may be less determinate. On one hand the Project's intervention should lead to increased overall biomass in areas used as range and in the saxaul forest fund areas that are the foci of the pilot areas. On the other hand, the sustainable harvest of saxaul wood for fuel is explicitly considered one of the incentives that would drive adherence of local populations to the participatory approach of the sub-component, and therefore there will also be offsetting releases of carbon into the atmosphere. On balance, more carbon can be expected to be sequestered in the saxaul areas in the future following the Project as compared to a future without the Project.

Irtysh Pine Forest: Project interventions will address land degradation in the Irtysh pine forest by arresting and reversing the process of deforestation caused by illegal logging and forest fires on these lands, as well as by promoting sustainable forest land management through improved fire and forest management systems. Project supported reforestation will have a positive impact on carbon sequestration in the pine forest, resulting in an estimated total incremental accumulation of about 3.9 million tons of carbon, which is equivalent to approximately 14 million tons of carbon dioxide, over the incremental area of 41 000 ha that would be reforested under the project during the implementation period. As the project seeks to demonstrate cost effective approaches to reforestation, a continuation of the planting program initiated under the project at a rate of 25 000 ha / year would accelerate the addition to the pool of about 2.4 million tons of carbon (equivalent to 8.7 million tons of carbon dioxide).

Dry Aral Sea Bed: Project interventions to plant 44 000 ha and directly sow 35 000 ha of the dry Aral seabed will accelerate the vegetation of approximately 118 500 ha in total, as natural regeneration will be facilitated on the open areas enclosed by the planting. Project planting on the DAS over the implementation period will result in moving forward by decades the sequestration of about 3.6 million more tons of carbon (equivalent to ~ 13 million tons of carbon dioxide) than would be accomplished by the current vegetation program. Should the project successfully demonstrate the cost effectiveness of the DAS operations to justify further public expenditure following the completion of the implementation, continued planting at a rate of about 31 000 ha annually would accelerate the addition of approximately 1.4 million tons of sequestered carbon (equivalent to approximately 5.1million tons of carbon dioxide) to the pool each year.

Annex 10: Safeguard Policy Issues

KAZAKHSTAN: Forest Protection and Reforestation Project

The EA confirms that the project triggers the World Bank safeguard policies on environmental assessment, pest management, involuntary resettlement and forests (see Section D. 6 of the PAD), and rules out application of the remaining safeguard policies (i.e. natural habitats, cultural property, indigenous peoples, safety of dams, projects in disputed areas and project on international waterways). A brief discussion of the significant issues raised by the triggered policies follows.

Environmental Assessment (OP/BP/GP 4.01). The EA confirms that the project has no significant adverse environmental impacts. On the contrary, the project provides significant environmental and social benefits (e.g. reforestation/vegetation of degraded lands, improved management of forest resources and services, enhanced conservation of biodiversity/natural habitat and increased public recreation and amenity values) that outweigh any potential risks. The potential adverse impacts identified are minor and can be effectively addressed through preventive actions or mitigation measures. Furthermore, the project will promote environmentally sound pest management, including integrated pest management where feasible (see pest management policy discussion below). Because one of the project areas suffered some radionuclide contamination during the Soviet Union's nuclear testing period in Kazakhstan, the EA analyzes the risks of unsafe exposure to radionuclides as a result of project activities. The conclusion, confirmed by top nuclear experts, is that the project will not pose a risk of unsafe exposure to such contamination. Finally, that the EA concludes that the project will result in certain global environmental benefits, such as reversing significant causes of land degradation and enhancing biodiversity/natural habitat in forest/woodland ecosystems, that justify GEF financing.

The EA includes an environmental management plan for the project, which specifies the preventive actions/mitigation measures, monitoring and institutional strengthening activities that should take place during implementation of the project to ensure sound environmental management. A brief description of the key provisions of this plan follows:

- **Preventive Actions/Mitigation Measures**. The EA identifies a number of actions and mitigation measures to address the potential adverse impacts of the project. This includes standard measures for addressing the direct physical impacts of project activities (e.g. planting, construction, roadwork, etc.) in environmental management guidelines. It also includes actions/measures that should enhance the environmental and social benefits of the project (e.g. to be completed with EA)
- **Monitoring**. The EA identifies a number of key ecological and social indicators for monitoring project impacts (e.g.). These include several indicators of the global benefits of project interventions that justify GEF financing (e.g. indicators of sustainable land management, improved biodiversity or natural habitat conditions, etc.). to be completed with EA
- **Institutional Strengthening**. The EA recognizes the lack of institutional capacity for effective forest protection and management and recommends a range of institutional strengthening options, including training, study tours, consultant services, special studies, etc., for building environmental management and monitoring capacity in the local

forestry and/or environmental institutions. These include measures for building pest management capacity, … to be completed with EA

Pest Management (OP 4.09). The EA reviews the literature on past experience in the management of pests and diseases in the Irtysh pine forest, finding that the main pests (e.g.) and diseases (e.g.) have been identified and are well known both in Kazakhstan and in the adjoining parts of Russia. The EA finds no urgent pest or disease issues in the region at this time but recognizes that severe pest and disease events, which tend to be cyclical in occurrence, are natural phenomena to the Scots pine species across its vast range. Furthermore, in Kazakhstan, recent pest and disease incidents have been exacerbated by both the recent history of wildfires and the poor health of the forests resulting from overstocking. The EA concludes that there are no basic research issues to be addressed, rather that more effective field control measures need to be developed, especially for defoliating insects, in the context of integrated pest management (IPM).

Basic project interventions that will improve overall forest management, by upgrading fire control measures and by enhancing forest health through thinning, will likely result in a much less favorable environment for pest and disease development. But, the EA also recommends the following measures to improve methods of direct control of pest and disease outbreaks:

- **Integrated Pest Management.** The project will provide technical assistance (i.e. a short-term international consultant) to evaluate opportunities for IPM in the Irtysh pine forests, to train local forestry staff in IPM techniques and to assist them in developing an appropriate IPM plan for the two project reserves.
- **International Cooperation.** The project will support international cooperation through the development of a consultative mechanism involving Kazakh and Russian forest managers in the Irtysh pine region to promote an integrated regional approach to pest and disease management.
- **Biological Control Demonstration.** The project will provide support (i.e. a short-term international consultant) to plan and implement a pilot demonstration project for biological control of the pine defoliating moth using a natural control agent (*Bacillus thuringiensis*).

As a result, project interventions will place the Irtysh forest in better condition to withstand periodic pest and disease events, improve the capacity of local forest staff to practice IPM, establish a better pest management planning framework and provide a demonstration of biological insect control methods that should reduce the future use of insecticides in the Irtysh forest.

Involuntary Resettlement (OP/BP 4.12). The EA confirms that there will be no actual resettlement of people in the project areas; however, the potential restrictions of access to natural resources under the project may adversely affect vulnerable persons by curtailing their legal or illegal incomes (at least on a temporary basis) and thus requires an *Access Restriction Process Framework (ARPF)* under this policy. The ARPF (See framework document in Annex ?) describes the project components potentially associated with restrictions of access, the people likely to be affected, and the participatory processes by which the project was prepared and will be implemented. It provides guidelines on the criteria for determining "affected people", the form of mitigation measures included in the project design for vulnerable people, the institutional arrangements implementing these mitigation measures, how conflicts will be resolved (including

grievance procedures), and monitoring and evaluation procedures. The process framework commits the Government to this participatory process and guidelines.
During the initial sector analysis and project identification phase, the Bank team and government officials consulted with a wide range of stakeholders in the project areas, as well as in Astana and Almaty, both on an informal basis, as well as in a series of workshops and formal meetings in 2002 and 2003. Again during the preparatory phase in 2004 and 2005, broad public participation was undertaken, including in both the social and institutional assessments, the economic analysis, and the rangeland consultancies. These consultancies, as well as the community involvement consultancy, the environmental assessment consultancy, and the fire management consultancy interviewed stakeholders including primary forest and rangeland users during field visits. Workshops in November 2004 on community involvement included preliminary discussion of the access restriction process framework. Additional workshops are planned for late March 2005, which will provide another opportunity to review the draft ARPF.

Overall, the project is likely to actually increase the access of local people to natural resources and would impose increased restrictions for only limited areas, as part of participatory resource management schemes. Project components potentially involving restrictions of access include:

- ***Irtysh Pine Forests Component*** The project supports the rehabilitation and effective management of the Irtysh pine forest, There are about 126,000 people currently living in and around the two reserves that make up the Irtysh pine forest, Ertis Ormaney and Semey Ormaney. A significant number of local people are employed in forestry, either as staff of the reserves or as temporary labourers. Small private sawmills in many villages process local timber for sale. Local people also rely on the forests for fuelwood, for which they pay nominal, affordable fees. Burned areas are sometimes used for grazing. The need to protect forest seedlings or reduce risks of forest fires may lead to restrictions on grazing, but the sparse human population means that there are ample grazing areas outside of forests, and no adverse impacts on livelihoods from this are anticipated. If restrictions of access for fruit and mushroom gathering may prove to be necessary for forest management purposes, they will be limited to well-defined areas, and accompanied by a consultative process with traditional users in an effort to facilitate access for these people to forest areas with comparable supplies of fruit and mushrooms. The project will also support a pilot initiative in participatory forest management in a few villages, through which local people would obtain rights to a share of forest products in exchange for undertaking specific protection and/or management responsibilities. This initiative will include a provision for supporting forest-based and other livelihoods alternatives to enable participating households to forego livelihood activities that would not be consistent with the forest protection and management responsibilities. Forest Support Teams (comprising a forestry specialist, a community mobilization specialist, and a business development specialist) established under the project will help to mediate any conflicts that might arise between vulnerable forest users, (including the fruit and mushroom gatherers and the small sawmill operators and employees), and forest agencies
- ***Saxaul Rangeland Management Component.*** The project supports 30 demonstrations in Kzyl Orda Oblast, which will involve herder agreements to enable rehabilitation of about 200 ha of saxaul rangelands, community management of grazing pressures, and provision of livestock watering wells or comparable support for some 2500-7500 ha of associated rangelands. Each demonstration would involve anywhere from one to ten rural households. The only direct restriction of access resulting from the project in these areas

will be voluntary restrictions imposed for rehabilitation on the 200 ha demonstration plots. Participating herders will define these restrictions and impose them on themselves, in exchange for the support for wells for livestock (or equivalent) in an associated 2500-7000 ha area of rangelands. These wells would make accessible a larger area of saxaul rangelands, thereby allowing more rotational grazing. The process of identification of demonstration sites will avoid sites that would be subject to traditional use by other, non-participating herders. The small size of the 200 ha plots for rehabilitation means that the project will not have any appreciable impact on access to saxaul for fuelwood. Rangeland Support Teams (comprising a rangeland specialist and a community mobilization specialist) established under the project will help to mediate any conflicts that might arise between vulnerable users of the demonstration areas, and government agencies or other stakeholders.

- ***Competitive Grant Program.*** The project establishes a competitive grant program for small innovative forest development subprojects (e.g. timber usufruct sharing, ecotourism, value addition processing of birch, community involvement in reforestation or environmental education, tungai floodplain protection, etc.) to be implemented by NGOs, state forest enterprises, research agencies, or the private sector. The operational manual will include procedures to identify any subproject that might result in restrictions of access affecting vulnerable people. Any subprojects with the potential for such restrictions would be required to assess the extent of potential impacts, and incorporate conflict management, mitigation, and monitoring measures into the subproject design as appropriate.

The results framework includes yearly monitoring of the number of people directly employed for project activities under each component. The socio-economic evaluation at mid-term and completion will include additional estimation of the impacts of the project on poverty, including consideration of whether incremental jobs are disproportionately benefiting those below the poverty line, whether there have been changes in resource access restrictions affecting the poor, the impact of competitive grant subprojects on vulnerable persons, etc. Other actions outlined under the ARPF will be monitored as part of the contract management of various consultancies and overall Bank supervision.

Forests (OP/BP 4.36). The EA establishes that the project, as defined by this policy, has direct impacts on the health and quality of the forests and rangelands in the project areas, affects the rights and welfare of local populations and their dependence upon and interaction with the forests and rangelands, and will effect positive changes in the management, protection and use of the forests and rangelands. A description of project interventions in terms of each of these impacts follows:

- **Impact on Health and Quality of Forests.** The objective of the project itself is to have a beneficial impact on the health and quality of selected forests in Kazakhstan, that is, "to develop ways of cost-effective and sustainable rehabilitation and management of forest lands and associated rangelands". The legacy of land degradation in the project areas, particularly in the Irtysh pine forest, has severely undermined the health and quality of forest lands. Project interventions will address this land degradation in the Irtysh pine forest by arresting and reversing the process of deforestation caused by forest fires and illegal logging on these lands, as well as by promoting sustainable forest land management through improved fire and forest management systems. By promoting and

sustaining forest biodiversity and natural habitat, project interventions will have benefits for the flora and fauna in the forest and rangeland ecosystems. Furthermore, project interventions rehabilitating and improving sustainable management of the saxaul rangelands will prevent the long-term degradation of these lands from overgrazing and overcutting.

- **Rights and Welfare of Local Populations.** The project will have beneficial effects on the rights and welfare of the local populations who depend on the forests and rangelands for food, fuel wood, fodder and other forest products. An estimated 126,000 people live in or rely on the Irtysh forests area. Project interventions in the Irtysh pine forest may affect their access to forest products and services, at least on a temporary basis, and potentially curtail legal or illegal incomes of vulnerable populations. These impacts are discussed fully in the Access Restriction Framework prepared for the project (see involuntary resettlement policy discussion above). Project interventions in the saxaul rangelands, on the other hand, should actually benefit local populations by rehabilitating small, selected areas of rangeland in their vicinity and improving sustainable management practices in the much larger, surrounding areas.
- **Changes in Management, Protection and Use.** The project will effect positive changes in the management, protection and use of the forests and rangelands. Project interventions will promote sustainable forest land management by improving fire and forest management systems, testing participatory forest and rangeland management. Approaches and sustaining the biodiversity and natural habitats of these forest and rangeland ecosystems.

Annex 11: Project Preparation and Supervision

KAZAKHSTAN: Forest Protection and Reforestation Project

	Planned	Acutal
PCD review	6/30/2003	6/26/2003
Initial PID to PIC	7/08/2003	7/08/2003
Initial ISDS to PIC	7/08/2003	7/08/2003
Appraisal	5/23/2005	
Negotiations	09/06/2005	
Board/RVP approval	11/22/2005	
Planned date of effectiveness	02/28/2005	
Planned date of mid-term review	1/15/2009	
Planned closing date	6/30/2012	

Key institutions responsible for preparation of the project:
Forestry and Hunting Committee, Ministry of Agriculture, with financial support from a PHRD grant, and in-kind technical assistance support from FAO and the European Union.

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Jessica Mott	Sr. Natural Resource Economist	ECSSD
Talimjan Urazov	Operations Analyst	ECSSD
Janna Ryssakova	Social Development Specialist	ECSSD
Frank McKinnell	Forestry Specialist	Consultant
David Colbert	Environmental Specialist	FAO
Anara Akmetova	Team Assistant	ECSKZ
Rathnavatee Chiniah	Executive Assistant	ECSSD
Aliya Kim	Finance Assistant	ECCU8
Andrey Kushlin	Sr. Forestry Specialist	ECSSD
William Sutton	Agricultural Economist	ECSSD
Bulat Utkelov	Operations Officer	ECSSD
Nurbek Kumanaliev	Procurement Specialist	ECCKG
Naushad Khan	Lead Procurement Specialist	ECSPS
John Ogallo	Sr. Financial Management Specialist	ECSPS
Allen Wazny	Sr. Financial Management Specialist	ECSPS
Anarkan Akerova	Legal Counsel	LEGEC
Hannah Koilpillai	Finance Officer	LOAG1
Natalia Piadushkina	Finance Analyst	LOADR

Annex 12: Documents in the Project File

KAZAKHSTAN: Forest Protection and Reforestation Project

Sector Studies:

- World Bank Sector Work– Kazakhstan. Forest Sector in Transition: The Resource, the Users and Sustainable Use
- World Bank Sector Work– Kazakhstan. Rangelands in Transition: The Resource, the Users and Sustainable Use

Other Background Documents

- Republic of Kazakhstan, The Forest Code

Bank Documents:

- Forestry Protection and Reforestation Project Information Document
- Forestry Protection and Reforestation Integrated Safeguard Data Summary

Preparation Reports

- Saty-Invest – Project Implementation Plan
- Saty Invest – Draft Operational Manual for Competitive Grant Program
- Saty Invest – Draft Access Restriction Process Framework
- Jacobs Gibb/Karlson, Stelan – Working paper on Forest Planting
- Jacobs Gibb/Teusan, Stefan – Working paper on Fire Management
- Harris, Peter – Saxaul Rehabilitation and Rangeland Development
- MNT Consulting/Michel, Stefan - Final Summary Report on Community Involvement
    - Annex 1 - Draft Operation Manual for Support for Consultation and Transparency in Policy, Planning and Financial Management Activities
    - Annex 2 - Draft Operational Manual for the Competitive Grants Program
    - Annex 3: Astanieva, Lidiya - Draft Communications Strategy
    - Annex 4 - Draft Access Restriction Process Framework
    - Annex 5 - Draft Operational Manual for Support of Alternative Livelihoods in the Irtysh Pine Forest Area
    - Annex 6 - Draft Operational Manual for the Participatory Saxaul Rangeland Rehabilitation Subcomponent
    - Summary of Stakeholder Workshops
- ERM/BISAM- Final Synthesis Report on Social Assessment
    - ERM/BISAM – Contents of semi-structured interviews, Focus Groups, other PRA methods
- ERM/BISAM – Final Synthesis Report on Institutional Assessment,
    - ERM/BISAM – Brief Report on Stakeholder Consultation Workshop
- Jacobs Gibb/Punkari, Mikko – Report on Environmental Assessment
    - Jacobs Gibb/Inyutina Vera – Biodiversity Assessment Report
    - Jacobs Gibb/Nurymgereyev, Kanysh – Environmental Impact Report

    - Jacobs Gibb/Ishkov, Evgeniy – Forest Pest Management Report
    - Jacobs Gibb/Miroshnichenko, Alexander/ Strilchuk, Yuri – Assessment of radionuclide hazards in Irtysh pine forests
- MNT Consulting/Venkataramn, Ravi - Forestry Protection and Reforestation Project Economic Analysis Report

Annex 13: Statement of Loans and Credits

KAZAKHSTAN: Forest Protection and Reforestation Project

			Original Amount in US$ Millions						Difference between expected and actual disbursements	
Project ID	FY	Purpose	IBRD	IDA	SF	GEF	Cancel.	Undisb.	Orig.	Frm. Rev'd
P059803	2003	NURA RIVER CLEANUP	40.39	0.00	0.00	0.00	0.00	40.39	0.00	0.00
P071525	2003	DRYLANDS MGMT (GEF)	0.00	0.00	0.00	5.27	0.00	5.27	0.00	0.00
P046045	2001	SYR DARYA CONTROL/NO. ARAL SEA	64.50	0.00	0.00	0.00	0.00	55.48	7.81	0.00
P065414	2000	ELEC TRANS REHAB	140.00	0.00	0.00	0.00	0.00	93.42	75.62	0.00
P008500	1999	ATYRAU PILOT WATER	16.50	0.00	0.00	0.00	4.50	0.56	4.90	0.56
P008499	1999	ROAD TRANSP. RESTRUC	100.00	0.00	0.00	0.00	0.00	13.12	9.79	0.00
P008507	1997	UZEN OIL FIELD REHAB	109.00	0.00	0.00	0.00	0.00	35.27	35.27	15.57
P008510	1996	IRRIG & DRAINAGE	80.00	0.00	0.00	0.00	0.00	9.23	9.23	0.00
		Total:	550.39	0.00	0.00	5.27	4.50	252.74	142.62	16.13

KAZAKHSTAN
STATEMENT OF IFC's
Held and Disbursed Portfolio
In Millions of US Dollars

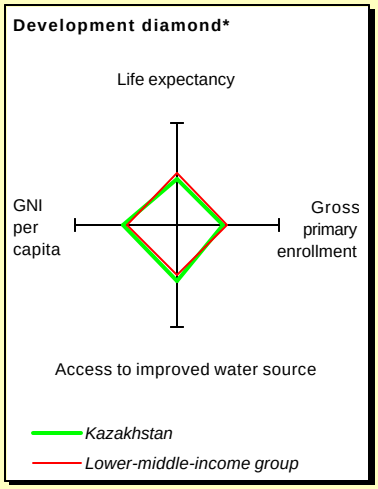
		Committed				**Disbursed**			
		IFC				**IFC**			
FY Approval	Company	Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
0/94/98/03	ABN AMRO Kazak	10.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
2002	Astana Tower	5.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00
2003	Citibank Kaz	25.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00
2000	FIOC	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00
1998	IK	10.11	0.00	0.00	0.00	10.11	0.00	0.00	0.00
2001	IKSME Resource	3.27	0.13	0.00	0.00	1.50	0.13	0.00	0.00
2002	Karachaganak	50.00	0.00	25.00	75.00	47.00	0.00	25.00	70.50
1996	Kazgermunai	0.00	0.68	23.87	0.00	0.00	0.38	5.82	0.00
1997/99	Kazkommertsbank	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0/97/03	Nelson Resources	0.00	3.66	0.00	0.00	0.00	3.66	0.00	0.00
1999/02	Rambutya LLP	1.68	0.00	0.00	0.00	1.68	0.00	0.00	0.00
2001	SEF CASPI Ltd.	2.50	0.00	0.00	0.00	2.50	0.00	0.00	0.00
1999	SEF Const. Mat	0.67	0.00	0.00	0.00	0.67	0.00	0.00	0.00
2000	SEF LP-GAZ Ltd.	0.52	0.00	0.00	0.00	0.52	0.00	0.00	0.00
2001	SEF NefteBank	0.00	0.00	2.50	0.00	0.00	0.00	2.50	0.00
2000	Sazankurak	12.50	0.00	5.00	0.00	7.50	0.00	5.00	0.00
1999	TuranAlem	6.70	4.95	0.00	0.00	6.70	4.95	0.00	0.00
	Total portfilio:	127.95	9.43	56.37	75.00	116.18	9.13	38.32	70.50

		Approvals Pending Commitment			
FY Approval	Company	Loan	Equity	Quasi	Partic.
2001	Kazkommertsbk 2	0.02	0.00	0.00	0.00
	Total pending committment:	0.02	0.00	0.00	0.00

Annex 14: Country at a Glance

KAZAKHSTAN: Forest Protection and Reforestation Project

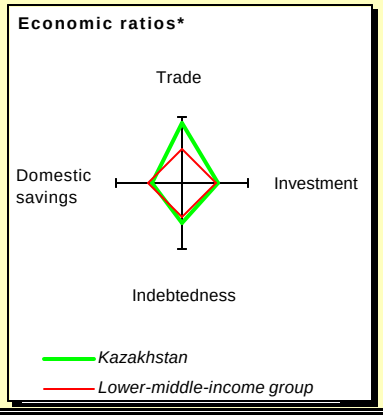
POVERTY and SOCIAL	Kazakhstan	Europe & Central Asia	Lower-middle-income
2002			
Population, mid-year *(millions)*	14.8	476	2,411
GNI per capita *(Atlas method, US$)*	1,510	2,160	1,390
GNI *(Atlas method, US$ billions)*	22.3	1,030	3,352
Average annual growth, 1996-02			
Population *(%)*	-1.2	0.1	1.0
Labor force *(%)*	-0.7	0.4	1.2
Most recent estimate (latest year available, 1996-02)			
Poverty *(% of population below national poverty line)*	38	..	..
Urban population *(% of total population)*	56	63	49
Life expectancy at birth *(years)*	62	69	69
Infant mortality *(per 1,000 live births)*	81	25	30
Child malnutrition *(% of children under 5)*	4	..	11
Access to an improved water source *(% of population)*	91	91	81
Illiteracy *(% of population age 15+)*	1	3	13
Gross primary enrollment *(% of school-age population)*	99	102	111
Male	99	103	111
Female	98	101	110



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

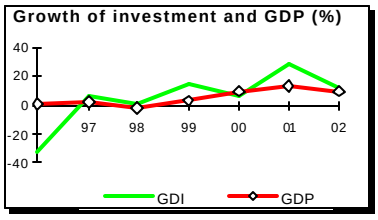
	1982	1992	2001	2002
GDP *(US$ billions)*	..	27.4	22.2	24.2
Gross domestic investment/GDP	..	31.5	26.1	26.9
Exports of goods and services/GDP	..	74.0	46.8	46.0
Gross domestic savings/GDP	..	30.2	23.7	23.5
Gross national savings/GDP	..	..	18.9	19.4
Current account balance/GDP	..	..	-5.6	-7.5
Interest payments/GDP	..	0.0	3.1	2.9
Total debt**/GDP	..	0.1	64.9	72.5
Total debt service/exports	..	0.0	31.1	36.7
Present value of debt/GDP	..	..	64.4	..
Present value of debt/exports	..	..	133.2	..

	1982-92	1992-02	2001	2002	2002-06
(average annual growth)					
GDP	..	0.4	13.5	9.5	5.9
GDP per capita	..	1.6	14.7	10.2	5.8



STRUCTURE of the ECONOMY

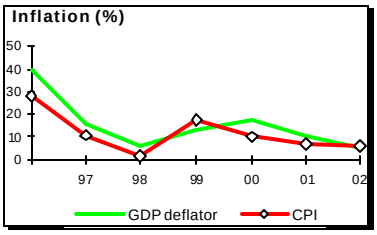
	1982	1992	2001	2002
(% of GDP)				
Agriculture	..	26.7	9.0	8.5
Industry	..	44.6	38.8	43.4
Manufacturing	..	8.9	15.6	17.4
Services	..	28.7	52.3	48.1
Private consumption	..	51.6	59.7	63.9
General government consumption	..	18.2	16.6	12.6
Imports of goods and services	..	75.3	49.2	49.3



	1982-92	1992-02	2001	2002
(average annual growth)				
Agriculture	..	-5.6	16.9	-6.0
Industry	..	-1.2	15.1	10.7
Manufacturing	..	..	..	..
Services	..	3.0	10.8	8.6
Private consumption	..	-0.1	18.9	9.1
General government consumption	..	-1.4	19.6	10.3
Gross domestic investment	..	-5.1	28.0	12.1
Imports of goods and services	..	-2.7	10.5	6.7

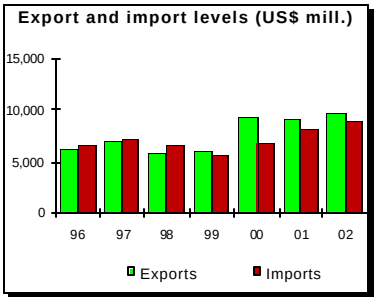
PRICES and GOVERNMENT FINANCE

	1982	1992	2001	2002
Domestic prices				
(% change)				
Consumer prices	..	2,960.8	6.4	6.2
Implicit GDP deflator	..	1,472.2	10.2	5.3
Government finance				
(% of GDP, includes current grants)				
Current revenue	..	..	21.8	22.5
Current budget balance	..	..	2.3	3.2
Overall surplus/deficit	..	..	-0.9	-0.2



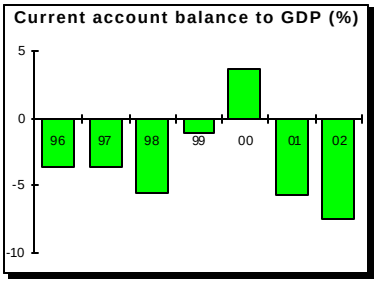
TRADE

	1982	1992	2001	2002
(US$ millions)				
Total exports (fob)	..	..	9,120	9,676
Fuel and oil products	..	..	4,733	5,038
Ferrous metals	..	..	1,009	..
Manufactures	..	..	1,508	1,618
Total imports (cif)	..	..	8,224	8,886
Food	..	..	836	..
Fuel and energy	..	..	790	..
Capital goods	..	..	2,837	3,125
Export price index *(1995=100)*	..	..	..	..
Import price index *(1995=100)*	..	..	..	..
Terms of trade *(1995=100)*	..	..	..	..



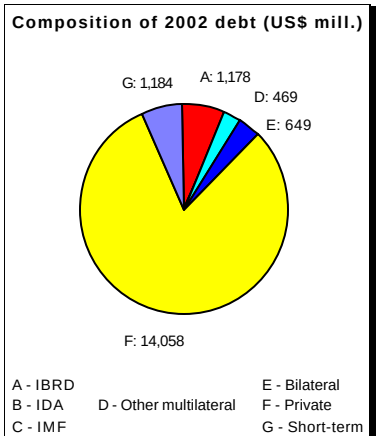
BALANCE of PAYMENTS

	1982	1992	2001	2002
(US$ millions)				
Exports of goods and services	..	5,758	10,393	11,129
Imports of goods and services	..	5,862	11,077	11,938
Resource balance	..	-104	-684	-809
Net income	..	-175	-1,215	-1,200
Net current transfers	..	168	232	190
Current account balance	..	..	-1,240	-1,818
Financing items (net)	..	..	1,625	2,089
Changes in net reserves	..	589	-384	-270
Memo:				
Reserves including gold *(US$ millions)*	..	..	2,508	3,136
Conversion rate *(DEC, local/US$)*	..	8.80E-2	146.7	154.8



EXTERNAL DEBT and RESOURCE FLOWS

	1982	1992	2001	2002
(US$ millions)				
Total debt outstanding and disbursed	..	35	14,372	17,538
IBRD	..	0	1,070	1,178
IDA	..	0	0	0
Total debt service	..	0	3,331	4,115
IBRD	..	0	101	107
IDA	..	0	0	0
Composition of net resource flows				
Official grants	..	3	28	..
Official creditors	..	10	34	20
Private creditors	..	17	2,128	1,809
Foreign direct investment	..	100	2,763	..
Portfolio equity	..	0	55	..
World Bank program				
Commitments	..	0	65	0
Disbursements	..	0	114	92
Principal repayments	..	0	47	56



Annex 15: Incremental Cost Analysis

KAZAKHSTAN: Forest Protection and Reforestation Project

Background

Irtysh Pine Forest

The Irtysh pine forest in northern Kazakhstan, which occurs on the eastern side of the Irtysh River, along the Russian border, is part of a large area of similar forest that stretches far back beyond the border. The Irtysh pines (Scots Pine - *Pinus sylvestris*) occur on generally flat topography, in sandy soils, in a region with an annual rainfall of about 300 mm. The Irtysh pine forests play an important role in land, wildlife and water shed management, as well as in local recreation and tourism. The forests also provide fuel wood, fodder, berries, mushrooms and hunting game for local populations.

The two areas of this forest covered by the project were designated Special Purpose Natural Reserves in early 2002 and are known as Ertis Ormany and Semey Ormany. The total area of the two reserves is 642,335 ha, of which only about 367, 000 is currently covered by forest. Large areas in these two reserves (some 127,000 ha) have been destroyed by illegal commercial logging and wildfires (75 percent of which are manmade) over the last 10 years, and much of the reserve land remains grassland because the harsh natural conditions make natural reforestation processes difficult. The deforestation resulting from this combination of forest fires and illegal logging has contributed to the degradation of these once-forested lands, threatened the structure and functional integrity of the Irtysh pine forest ecosystems and jeopardized the livelihoods of the local populations dependent on legal forest products and services. Furthermore, wind erosion, which may not be a concern in most of the Irtysh pine forest, represents a real concern in the vicinity of Semipalatinsk.

Because only limited areas of the two reserves (200-1000 ha) have been replanted in recent years, there is a real need for a major reforestation program. The vast areas of degraded forest land represent significant lost economic, ecological, and social opportunities, whether for timber production, landscape conservation biodiversity habitat management, or public recreation. The vacant land needs to be reforested with pines, which seem to be the natural climax vegetation for the area.

Project interventions will address land degradation in the Irtysh pine forest by arresting and reversing the process of deforestation caused by illegal logging and forest fires on these lands, as well as by promoting sustainable forest land management through improved fire and forest management systems. Project supported reforestation will have a - positive impact on carbon sequestration in the pine forest, resulting in an estimated total incremental accumulation of about 3.9 million tons of carbon, which is equivalent to approximately 14 million tons of carbon dioxide, over the incremental area of 41,000 ha that would be reforested under the project. As the project seeks to demonstrate cost effective approaches to reforestation, a continuation of the program initiated under the project at a rate of 25,000 ha a year through the planting of seedlings and direct sowing would each year accelerate the addition to the pool of about 2.4 million tons of carbon (equivalent to 8.7 million tons of carbon dioxide). Improved fire management would prevent the release into the atmosphere of about 71,500 tons of carbon dioxide each year that would otherwise be released in the absence of the project. .

Dry Aral Seabed

The decline of the Aral Sea, now about 35 percent of its former size and still shrinking rapidly, is one of the major environmental disasters in Central Asia in the last 100 years. In fact, the catastrophic decline of much of the Aral Sea basin's rich biodiversity (including many endemic species of birds, mammals and fish), coupled with the loss of the sea's tempering effect on the basin's climatic conditions, represents an ecological loss of global significance. (See background report on the dry Aral Seabed prepared for the Environmental Assessment) The sea shore, which retreats 2-4 km a year, is now 150-200 km away from its original shoreline. This receding shoreline has exposed an estimated 4.2 million ha of former seabed, much of it land that is highly saline. Not all this exposed seabed remains bare ground; native halophytic plants cover the newly exposed land to some extent, the first step in a precarious natural vegetative process. These pioneering plants die out as salinity decreases, and unless a more diverse cover of grasses, shrubs and small trees get established in the next few years, the land become a mass of shifting dunes, and a more permanent establishment of plant cover is postponed by decades.

Despite harsh ecological conditions, the Aral Sea lowland is home to surprisingly rich communities of flora and fauna, including gazelles gophers, desert monitors, sand rats, jerboas, lizards and snakes wherever sustainable plant cover has managed to be established. Wild boars, jackals and deer can be found, especially near springs that occur in some places. . A number of fauna of global significance are listed in the Red Data Book of Kazakhstan, such as the wild ass, saiga antelope, goitered gazelle, mountain sheep and roe deer. (See Environmental Assessment and background report on biodiversity)

The degraded dry Aral Seabed (DAS) is an extremely hostile natural environment. Temperature extremes in both summer and winter, desiccating aridity, very high wind strengths and wind-blown particles (dust/salt) make it a stressful environment for small plants. The degraded land uncovered by the receding sea varies in the texture and salinity of its substrates, which in turn governs their potential for natural and man-induced vegetative processes. The sandy substrates exposed in the 1960s and 1970s now contain little salt or dust and have high potential for natural development of vegetation. The movement of these sandy substrates across the landscape in dunes that cover the salty soils actually improves their potential for vegetation. The other areas amenable to planting efforts are the recently exposed areas that have been colonized by native halophytic plants and have not yet reverted to sand dunes. Once vegetative cover is established, it begins to lower the groundwater table and progressively makes the land less hostile.

It is the salty soils, the solonchak substrates exposed in the 1980s and 1990s that pose the greatest challenge for vegetation of the DAS. These soils contain high levels of silt and salt and have low potential for natural vegetation. The solonchak soils are not suitable for saxaul (*Haloxylon species*), only certain species of shrubs and perennial herbs can tolerate the higher concentrations of salt. This retards the natural vegetative processes on the DAS and complicates manmade vegetative strategies. Additional research and careful planning are necessary to identify and tailor the appropriate plant species to the appropriate soil conditions.

In Kazakhstan the total area of degraded DAS that remains to be rehabilitated is about 2.6 million ha, while the estimated total area that has been vegetated over past years either through natural spread or human efforts is only about 80,000 ha. Recent planting efforts have been

minimal, with no planting done between 1993 and 2002 and only 4500 ha vegetated between 2002 and 2004.

At the current rates of vegetation on the DAS in Kazakhstan, it will take well into the next century to turn the degraded seabed into ecologically productive land. Project interventions accelerating the vegetation of the DAS by planting saxaul and other species will accelerate the vegetative cover of lands where natural spread of vegetation would otherwise take much longer. This will help reverse land degradation, introduce new structure and functional integrity into the emerging ecosystem, significantly reduce localized wind erosion and, with potential designation of the lands as a natural reserve, produce long-term global benefits at the site of a global ecological catastrophe. Furthermore, project interventions accelerating the vegetation of the DAS will benefit native flora, including endemic and endangered species (some globally significant) and create new natural habitat for fauna from the surrounding lowlands and steppe, which includes a number of globally significant species, as noted above. Project interventions to plant 44,000 ha and directly sow 35,000 ha of the seabed will accelerate the vegetation of approximately 118,500 ha in total, as natural regeneration will be facilitated on the open areas enclosed by the planting. Project planting on the DAS over the implementation period will result in moving forward by decades the sequestration of about 3.6 million more tons of carbon (equivalent to about 13 million tons of carbon dioxide) than would be accomplished by the current vegetation program. Should the project successfully demonstrate the cost effectiveness of the DAS operations to justify further public expenditure following the completion of the implementation, continued planting at a rate of about 31,000 ha annually would accelerate the addition of approximately 1.4 million tons of sequestered carbon (equivalent to approximately 5.1million tons of carbon dioxide) to the pool each year.

Saxaul Rangelands

The total area of Kyzyl Orda Oblast is about 15,740,000 hectares, of which about 13,000,000 hectares or about 80 percent of the total area are considered grazing land. The vegetation on these rangelands is in generally good condition, considering the low rainfall and extreme environment of the region. The dominant and most ecologically significant plant species on the rangelands is saxaul, which is found in two species, black saxaul (*H. aphyllum*) and white saxaul (*H. persicum*), remarkably adapted to the Central Asian desert woodland environment. It plays a critical role in the rangelands of Kyzyl Orda in providing fuel wood for local population, regulating hydrological conditions, stabilizing sandy soils and generally protecting rangeland vegetation.

On the whole, the number and range of other plant species, predominantly shrubs and woody herbaceous plants, also appear generally good, with plant cover and physiognomic status better than might be expected. The pastoral species, however, tend to be of lower status within depleted saxaul areas, reflecting the intensity of use compared to the non-saxaul open grazing areas. But, in all, the condition of the vegetation in Kyzyl Orda is currently better than it has been for a number of decades, due to the collapse of livestock production in the 1990s.

The exceptions to the above are the severe signs of localized overgrazing and vegetation depletion around villages and other settlements. In particular, the year-round, unregulated grazing and high concentrations of livestock around former collective farm centers and railway worker settlements have resulted in degradation and depletion of saxaul. Within the project area,

the distribution of saxaul-based rangelands appears to be an irregular patchwork with few continuous stands extending for more than a few tens of kilometers. Often the saxaul is present in a heterogeneous mix of overlapping plant communities. While generally the saxaul plant numbers and height in the project area might be considered good, individual stands of tall, vigorous saxaul suggest the form and quality of a healthy saxaul stand, as well as the level of general depletion of saxaul stock.

Although the human and animal pressures on the saxaul rangelands have been reduced in recent years (which explains their generally good condition), there is every reason to believe that these pressures will return as Kyzyl Orda develops economically and its human and animal populations increase. Project interventions rehabilitating and improving sustainable management of the saxaul rangelands will prevent the long-term degradation of these lands from overgrazing and overcutting and assure the rangeland ecosystem's stability, functions and services for future generations. As far as biodiversity is concerned, the existing low level of degradation suggests that project interventions are unlikely to have a major impact on improving biodiversity habitat, but if project interventions rehabilitating and regularizing communal management of the rangeland resources are subsequently replicated on a larger scale, they should reduce wildlife/livestock competition for these resources and thus result in benefits for rangeland fauna, including several species listed in the Red Data Book of Kazakhstan (i.e. goitered gazelle, mountain sheep and roe deer). (See Environmental Assessment and background report on biodiversity). If successful, the project will demonstrate an approach to maintaining saxaul rangelands in a state that would preserve a higher rate of carbon sequestration than would otherwise be realized, assuming current trends in rangeland degradation continue.

Other Forest Areas of Kazakhstan

The national component of the project will also benefit other forest areas of Kazakhstan. As mentioned in PAD Annex 1, Kazakhstan possesses a total of 11.5 million hectares of forested land, the third largest forest area in the Eastern Europe and Central Asia (ECA) Region, in spite of the fact that forests areas account for a mere 4% of its territory. About 300,000 people are directly dependent on the forest sector, while an estimated 2.5 million live in or rely on the forests for fuel wood, fodder and other forest products. The generally arid, extra-continental climate of Kazakhstan makes the existing forest and rangeland ecosystems particularly susceptible to various natural and man-made threats, including fires, pests, overgrazing, over-harvesting, habitat degradation, and desertification. Forest lands and rangelands have been subject to increased threats of deforestation and other degradation in the recent years of political and economic transformation in 1991. Kazakhstan has a number of very distinct forest and rangelands domains apart from the Irtysh pine forests and the saxaul rangelands described above. Some of the areas with gobal significance include

- the *Altay Mountains* (home to unique Siberian biodiversity and also a concentration of 75% of the commercial-grade spruce and fir timber in Kazakhstan).
- the *Tien-Shan and Ile-Alatau Mountains* (a globally unique habitat in terms of agrobiodiversity, wild nut and fruit production, a critical water source for the Aral Sea and Lake Balkhash, and an internationally important tourist destination).
- The *riparian forests* along major rivers. These forests play an important water-regulating role in the southern floodplains (tugay forest) and constitute almost the only type of forest in the oil-rich but treeless desert of western Kazakhstan.

The national component, with its support for improved monitoring and planning, human resource development, policy development, and grant program for innovative initiatives, will benefit all of Kazakhstan's forest areas.

Analysis

The Baseline Scenario includes activities undertaken by following parties.

Government. The Government will increase current levels of expenditure for forest management and administration by **US$ 28.8 million** to cover portions of the planting, fire management and thinning activities in the Irtysh pine forests, as well as a portion of the relatively smaller planting and rangeland management activities in Kzyl Orda, a portion of the national level policy development, human resource development, and information support, and project administration as well as about 1.6 million of competitive grants in innovative forestry subprojects/

Donors and IFIs. The IBRD will contribute approximately **US$ 30.0 million** to finance a portion of the project activities in Irtysh pine forests, as well as portion of the relatively smaller expansion of its planting programme on the dry Aral seabed and the improvement of saxaul rangeland management.

Baseline Costs. The full Baseline Scenario is therefore estimated to cost **US$ 58.8 million** (including contingencies). This estimate includes financial resources allocated or to be allocated for activities related to an expansion of activities in the Irtysh pine forests including reforestation of 41,000 ha, fire management, and thinning; a expansion of the planting programme on the dry Aral seabed to cover about 55,000 ha, the improvement of saxaul rangeland management encompassing about twenty one demonstrations, a competitive grant program of distributing US$ 1.6 m for innovative forestry subprojects throughout Kazakhstan including additional forest areas of global significance, and improvement of the operations of national institutions involved in forest policy, information, human resource development, and administration. This baseline scenario is consistent with the current national development goals and institutional capacity.

Baseline Benefits and Constraints. Under the Baseline Scenario the Government will undertake, as a matter of national priority, a number of measures in the Irtysh pine forests to preserve and rehabilitate what is regarded as a unique natural asset. In doing so the Government will be addressing growing concerns of land degradation related to the loss of forest area near towns and cities in the north-eastern part of the country. Much of the loss in area is due to fire but local economic conditions have also contributed to deteriorating forest stocking and health. Under the baseline scenario the Government will increase its capacity to reforest areas, implement effective fire management and manage existing stocked areas more effectively. It will also endeavour, on a limited scale, to improve local incentives in support of preserving the Irtysh pine forest reserves and facilitating their regeneration. The Baseline Scenario will lead to a decreased threat of encroaching desertification at the edges of the pine forests, an expansion of pine forest resources and option values, improved employment prospects for local populations, and to a limited extent – due to the slow growth rates of the Irtysh pine forest species – will contribute towards increased carbon sequestration.

The Baseline Scenario will also entail an expansion of planting saxaul and other species in some areas of the dry Aral seabed as a hedge against possible adverse environmental impacts of land degradation in the region. Local populations would be the primary beneficiaries of any long-

term benefits; although, there will also be some wider environmental benefits attributable to the expansion of woody biomass in the desert region.

Also, in view of the fact that the Aral Sea region is becoming more sparsely populated and doubts concerning the causal factors behind wind-blown dust from the seabed over distances, the rationale for greatly expanding a planting programme on the seabed on the basis of benefits to the local population is problematic. Under the Baseline Scenario the Government will endeavour to expand current planting targets, but be wary of ambitious targets, especially in still to be proven technologies involving pelleted seed or experimental planting on the problematic solonchak soils.

The Baseline Scenario addresses significant, currently observable issues of land degradation in rangeland areas under forest administration. There are economic factors driving increased use of range resources as employment opportunities in south-west of the country remain difficult, especially in the Aral Sea region, where the collapse of fisheries has forced households to seek other sources of income elsewhere. The threat of rangeland degradation in turn is a threat to Kazakhstan's arid and semi-arid areas, which provide fragile habitats for a number of animal species of biological interest within and outside the country. The demonstrations in improved rangeland management, thereby livelihood concerns of local people as well as beginning to develop the capacity for sustainable natural resource management in the context of new, post-transition institutional roles of government and local people.

The Baseline Scenario, while focusing on certain environmental problems in Kazakhstan, is not particularly concerned with measures involving international interchange, and the scale of activities having appreciable implications for biodiversity is limited to a level appropriate to national priorities and domestic benefits. Efforts at participatory natural resource management are limited due to the limited experience of such approaches in former Soviet Union (CIS) countries and in degraded, temperate desert areas. Compromises may be available but the development of socially acceptable technical options does not have a place on the research agenda.

GEF Alternative.

GEF Alternative and Benefits. The GEF Alternative will allow the project to expand its interventions in several significant areas, including international interchange, capacity building, on-the-ground forest/rangeland investments and targeted research, and environmental monitoring in order to realize the potential global benefits for sustainable forest and woodland management and biodiversity conservation from the existing interventions of the Baseline Scenario. In particular, the GEF Alternative will provide the project with

- expanded opportunities for international cooperation and capacity development
    - on the management of transboundary resources (i.e. the Irtysh pine forest and the DAS)
    - for learning from international experience in innovative forest/rangeland management including participatory approaches (e.g. participatory forest management in the Irtysh pine forests, participatory management of sexual rangelands in Kzyl Orda, and competitive grant subprojects involving participatory natural resource management), and

    - environmentally beneficial approaches (e.g., capacity building in integrated pest management, in analysis of geographic information, in incentive and other policy frameworks that improve the effectiveness and sustainability of land management),
- increased investments in accelerated vegetation of the DAS, rehabilitation of the saxaul rangelends and promotion of innovative forest rehabilitation/development through competitive grant subprojects,
- research and demonstration on appropriate species and practices for vegetation of the DAS and sustainable management of the saxaul rangelands, and
- environmental monitoring of land degredation trends.
- incremental support for the additional project administration requirements involved in GEF financing

Under the GEF Alternative the project would still comprise the following baseline components, expanded with GEF financing as explained in the following:

Component 1: Rehabilitation of Irtysh Pine Forest With GEF financing, this expanded component will support initiatives for developing international cooperation on management of the transboundary Irtysh pine forest resources. The project areas in the Irtysh pine forest are part of a larger transboundary natural resource system that extends from Kazakhstan into Russia. The Baseline Scenario involves the national interventions addressing the Kazakh portions of these resources; the GEF Alternative will finance the development of agreements and modalities for international cooperation with Russian foresters in management of these transboundary resources. In particular, this cooperation will focus on the common forest problems of fire, pest and disease management. In addition, the GEF resources will provide expanded training opportunities for the Kazakh foresters working in the two Special Purpose Natural Reserves, Ertis Ormany and Semey Ormany. This training would include sustainable forest ecosystem management, enhanced protection of forest biodiversity and natural habitat, and improved productivity of forest products and services, as well as international experience in participatory approaches for involving local populations in all of the above. To support the latter approaches, the GEF will also support long-term consultancies and additional technical assistance needed to design and implement appropriate participatory approaches to forest management. Finally, the GEF financing will allow additional international and national consultancies to address specific concerns in pest and disease management, fire prevention and control and biodiversity/natural habitat mapping.

Component 2: Environmental Amelioration in Kyzyl Orda Oblast. With GEF financing, this expanded component will also support initiatives for international cooperation on management of the transboundary resources on the DAS. Here again the Baseline Scenario addresses the national interventions dealing with the Kazakh portions of the DAS; the GEF Alternative will finance the development of agreements and modalities for international cooperation with Uzbek foresters in amelioration of these transboundary resources. Further, the interventions will capitalize on existing cooperation between Kazakhstan and Uzbekistan on research, demonstration and investment in vegetating the DAS and ensure close collaboration with GTZ, the other key development partner intervening in this area. In addition, GEF support for this component will expand the scope of on-the-ground investments in both the DAS and the saxaul rangelands. Successful vegetation of the remaining 2.6 million ha of degraded DAS in Kazakhstan will be a monumental undertaking. The Baseline Scenario comprises the substantial national commitment to realizing this undertaking; the GEF Alternative expands the scope of

these investments (by 30 percent) in the vegetation of the DAS, in order to realize the potential global benefits of the undertaking and to demonstrate the international community's commitment to remedying the global ecological loss represented by the Aral Sea. The GEF investments would be designed to demonstrate vegetative processes that could be replicated elsewhere in the Aral Sea basin. It would also enable increased research attention to promoting vegetative cover on harsh solonchak soil conditions in other desert and semi-desert regions, which are probably a more significant source than the sandy soils of the wind-blown dust that crosses international boundaries. Similarly, GEF financing for this component will expand the scope of project interventions (by 30 percent) in rehabilitating the saxaul rangelands, again with the intention of realizing the global benefits of such rehabilitation and sustainable management of productive woodlands. Finally, research capabilities in the forest sector have declined in Kazakhstan in recent years. The Baseline Scenario provides the national investment to restore various research and demonstration capabilities in the sector; the GEF Alternative provides additional support for research and demonstration, particularly in the refinement and adoption of vegetative practices and technologies that will introduce stability and sustain the functions and services of the newly vegetated DAS ecosystem.

Component 3: National Institutional Development and Project Management With GEF financing, this expanded component will support a number of the activities necessary to build institutional capacity within the FHC for improved planning and management of forest and woodland resources, including mapping and surveying needed to better understand and assess forest sector resources, expanded monitoring capabilities and information systems. In addition, GEF resources will finance limited investments in innovative forest rehabilitation and management. Kazakhstan offers a wealth of opportunities for introducing, testing and demonstrating innovative forest management and development that addresses sustainable land management. The Baseline Scenario provides a limited national commitment to supporting innovation in the forest sector through competitive grants; the GEF Alternative expands this commitment by 50% (i.e., covering one third of total value of grants).

Cost. The total cost of the GEF Alternative is estimated for the 6 years period at the level of about **US$ 63.8 million** (including contingencies). The Baseline Scenario, GEF Alternative and incremental costs, as well as corresponding local, national and global benefits, are displayed in summary form in the following table.

Incremental Cost Analysis Summary

Project Component	Cost Category	US$ Million	National/Local Benefits	Global Benefits
1. Rehabilitation of Irtysh Pine Forest	Baseline	40.8	Reforestation and improved management of pine forest lands, enhanced protection of biodiversity and natural habitat, increased participation of local communities, increased supply of forest products and services	
	GEF Alternative	41.2	Same as above	Increased capacity and international interchangee (i) to to enable cooperation with Russia on sustainable management of transboundary pine forest resources, (ii) adapt participatory natural resource management approaches to steppe forest areas and the CIS context, and (iii) to further mainstream sustainable land management concerns into forestry activities
	Increment	0.4		
2. Environmental Amelioration in Kyzyl Orda	Baseline	7.5	Vegetation of dry Aral Seabed, extension of natural habitat/shelter onto seabed; rehabilitation and sustainable management of saxaul rangelands, enhanced protection of natural habitat, increased supply of rangeland products and services	
	GEF Alternative	10.7	Same as above	Expanded scope of vegetative planting of the Dry Aral Seabed that creates new biodiversity to compensate for earlier biodiversity losses associated with the Aral Sea degradation, expanded scope of saxaul rangeland rehabilitation that conserves significant biodiversity, international cooperation with Uzbekistan in accelerating vegetation of transboundary dry seabed; targeted research and demonstration on appropriate vegetative practices and technologies, especially on problematic solonchek soils which are a likely source of wind-blown dust that crosses international borders
	Increment	32		

Project Component	Cost Category	US$ Million	National/Local Benefits	Global Benefits
3. National Institutional Development and Project Management	Baseline	10.5	Enhanced capacity for sustainable management of forest and rangelands; improved knowledge of natural resource systems; experience gained from pilots funded by competitive grants	
	GEF Alternative	11.9	Same as above	Enhanced capacity for sustainable management of forest and rangeland ecosystems; testing, pilot demonstration and replication of innovative forest and woodland-related subprojects through competitive grants
	Increment	1.4		
Totals	Baseline	58.8		
	GEF Alternative	63.8		
	Increment	5.0		

Annex 16: STAP Roster Review

KAZAKHSTAN: Forest Protection and Reforestation Project

I. STAP Reviewer Comments.

Reviewer: German Kust

Date: 02 March 2005

Introduction and general effect of the project.

The main idea of the project is reflected in its title and sounds as forest protection and reforestation. The project contains three main components: two on the local level 1. Rehabilitation of Irtysh Pine Forest and 2. Environmental Amelioration in Kyzyl Orda and one on the state (regional) level – 3. National Institutional Development, Competitive Grant Program, and Project Management. The total cost of the project is relatively huge for the environmental project and GEF full-size grant of **US$ 5 m** is less than 10 percent of the cost of baseline scenario. Nevertheless, GEF alternative provides the project with more global effects, because it strengthens the sounding of local and regional activities as a part of global effort on the relevant environmental issues.

The general objective of the full project is to develop and initiate ways of sustainable and cost effective environmental rehabilitation and management of forest lands and associated rangelands that are or suspected to be subjected to degradation in future due to the "jumping" kind of the economic development of the region (when overexploitation of natural forests and related rangelands could be the result either of poverty of the local communities or of the expansion of increasing economy on the natural ecosystems). The project will support field operations, provision of new technology and equipment, as well as staff capacity building. The field operations will take place partly in forests along the Irtysh River, and partly on rangeland and the eastern part of the dry bed of the former Aral Sea.

As it is clear from the Incremental Cost Analysis (Annex 15), the GEF grant seems to be directed mostly on the capacity buildings through the strengthening of local communities, implementation of the community developed local action plans, which take into account the local environmental issues as the main conditions for sustainable development. New capacity buildings will promote (at the level of local model) more balanced exploitation of natural resources, reduce the human impact due to the new environmental friendly technologies of land management and create conditions for their conservation and rehabilitation. As well GEF financing will support initiatives for international cooperation on management of the transboundary resources (mainly with Russia and Uzbekistan) and institutional capacity within the state headquarters for improved planning and management of forest and woodland resources.

The project is relevant mostly to the GEF focal area of land degradation rather focus on addressing key land degradation issues in forest lands, and also has some relevance to other GEF focal areas such as biodiversity conservation and global climate change with focusing on arid and semi-arid lands. So, I consider the project is eligible in the framework of GEF Operational

Program on Sustainable Land Management (OP#15) as well as associated with the purposes of OP#1 (Arid and Semi-Arid Zone Ecosystems) and OP # 12 (Integrated Ecosystem Management).

Key issues

Scientific and technical soundness of the project

On the whole the scientific and technical background of the project sounds well. It includes the results of studies of natural, social an economic conditions for project designing, implementation, sustainability and replicability as well as grounds for the engaging of different consultants and specialists in the project activities. Unfortunately, most of these background materials are not included in the PAD text but available through different reports prepared during the PAD development.

As the project consists of separate (in geographic or technical aspects) components and subcomponents, it is necessary to assess their scientific and technical soundness also separately and then to make the common conclusion

Sub-Component IA. Reforestation of fire-damaged pine forest includes:

- improved reforestation of 41,000 ha with seedlings and if feasible directly seeded,
- re-establishment of seed production areas,
- applied research on cost-effective nursery, planting and direct seeding technologies (greenhouses, containers, seed pelleting, forest thinning, etc.).

The scientific and technical grounds of the activities of this subcomponent are sufficient. And it is clear that new technologies can intensify the reforestation after fires or logging. But there are some questions that remain not clear to me and, to my mind needed to be reflected in the PAD or its annexes .

1. How to consider the following text in the PAD: "There is an additional sub-component that will be activated after the MTR, if still considered necessary. This is improvement to the site preparation process. Currently the debris left after salvage harvesting of the burnt forest is heaped by bulldozers, either into heaps and burnt away or pushed into windrows and left to rot. The project provides for the testing of rolling chopper units that shatter the debris and incorporate it into the surface soil, thus facilitating the operation of planting machines and also hastening breakdown of the debris and release of nutrients into the soil. Conservation of the slender nutrient capital of sandy soils in this way is essential to maintain productivity in the long term"?. I mean first of all the words "if still considered necessary". Is there somebody against? What are the arguments? What are the reasons to wait? If there are some needs for special scientific researches on this, previous or similar items, it is necessary to point them in the text of PAD.
2. In the table 4.1. the project level of planting will rise up to 2012 year from 2000 to 10000 ha and of seedling – from 0 to 15000 ha. So, by a combination of improved technology for planted seedlings and direct sowing the entire burnt area will be reforested in 10 years, rather than the 70 years that the current methods will require. The question is what is the follow-up of this improved technology after 10 years? Who will consume the production of nurseries after this period? What local people involved in the process should do if the output of nurseries will decrease? I guess, that it is necessary to include in the activities of the project (e.g. in the component III) the task to assess the total

possible consumption of this production in the region and adjacent areas in order to fix the upper level.

Sub-Component IB Improved Fire Management and Other Forestry Support includes development and implementation of improved forest fire management of the 642,000 ha through:

- information, consultation, and training to strengthen the fire management strategy,
- improved facilities for fire prevention and detection, including lookout towers, communications equipment and rejuvenation of the firebreak network, and
- improved facilities for fire suppression including road rehabilitation, fire station equipment, and fast-attack vehicles.
- a program of forest thinning and cleaning,
- improved facilities for more effective patrolling to reduce illegal activities,
- capacity building in integrated pest management

The scientific and technical grounds of the activities of this subcomponent are well-founded. Here is only one debatable point.

1. It has been mentioned in few reports preceding PAD that visual monitoring from aircrafts or helicopters is the most effective method to detect fires. But this method is expensive and, I guess, it was the reason to stay on the lookout towers. Another relatively cheap method could be also a system of space monitoring of fires. But the effectivity of this system is visible at least on the regional level. So, I wish to recommend to think on this methodology in the component III but use certain areas of the Irtysh forest as model testing areas.

Sub-Component IC Forest Partnership Development The PAD pointed that "The project will explore the feasibility fostering of community incentives to reduce illegal logging and supporting improved livelihoods for people around the periphery of the two Ormaneys, in ways that link poverty reduction to improved forest management. This may include the devolution of the responsibility for management of certain areas of the Irtysh forest to communities, under some form of participatory forest management. In return for certain usufruct rights, yet to be determined, and the right to be employed for specified tasks in the nominated forest area, the community would assume responsibility for the protection and ongoing management of the area under some sort of lease agreement. The ownership of the land, as well as the management direction of the forest, would always remain with the FHC. This approach is seen as one possible avenue by which community involvement in forest management could reduce FHC management costs, fire risks and illegal activities, while gaining assured employment and rights for the associated community" . This approach seems to be effective and is very close to former Soviet scheme of so-called "mezhkolkhoz forests" (mezhkolkhoz – Russian acronym for joint venture of several collective farms). But at present economic situation it is a risk that usufruct rights of the community can be usurp by the person or group of persons acting on behalf of the whole community (even being formally elected). Taking in mind that in conditions of total poverty the forestry is "a sweet piece of cake", it is necessary not to forget that here is a window for corruption, especially in the distribution of "rights to be employed for specified tasks in the nominated forest area". So, I support the idea, but I also support that it might be only a thorough feasibility study conducted by independent consultants with deep involvement of different groups of the local people. The application of this idea must be very careful in order to provide benefits to the local communities entirely. Otherwise project can face with the threat of acts of sabotage.

Sub-Component IIA Planting on the Dry Aral Seabed includes:

- planting 79,000 ha (44,000 with seedlings and if feasible, 35,000 directly seeded)
- developing and using cost-effective nursery and planting technologies and cost-effective direct seeding techniques.

The assessment of scientific and technical soundness of this sub-component is a very complicated thing. From one hand, Aral Sea ecological catastrophy is well-known in the world and each effort of the international community to reduce negative results of sea collapse seems to be positive. From the other hand, the new ecosystems on the dry Aral Seabed (DAS) are very fragile, complicated and are not studied well to organize hasty activities here.

My general conclusion is the following:

- I entirely support the idea that the DAS can be and must be in future used for ecologically friendly economic purposes. It should be either pastures with carefully limited grazing impact or better – some kind of protected area.
- The presented project documents do not convince me completely of the ecological harmlessness of the methods suggested to implement planting on the DAS.

Why so? The main arguments appear from the contradictions between PAD and pre-PAD reports (citations are below):

- "…the preparation team was unable to find evidence of adverse impacts of the dust, salt, and pesticide deposition on human health that could be used to justify the project…" "Furthermore, the main sources of this dust appear to be from abandoned agricultural fields along the former coastline, and from the salt covered refractory (solonchak) soils of the DAS. To date, vegetation of the DAS at significant scales has not been feasible on the refractory soils, which cover at least 20% of the DAS. This topic requires further research. Natural and human-assisted vegetation is feasible on the portions of the DAS with sandy soils, but these are not a major source of the salt and dust. However, it appears that vegetated areas on sandy DAS soils does help reduce wind erosion on a more localized scale". So, health hazard is not evident, refractory soils do not allow to grow plants, and friendly surfaces are overgrown already being not a source of salt and dust. In these conditions what is the purpose to organize a scaled planting experiment? One can suppose that new planting technologies used in the GTZ project or somewhere else provide more benefits. But there are no arguments in the project documents that these technologies are more effective. Moreover, the Biodiversity report informs that "in the period of 1988 – 1994 afforestation of the dried sea bed on the square of 54795 ha was made. Currently 12920 ha of them are covered with forests. Currently 30% of one and five year sapling can grow". Is 30% an effective share or not? The total expected area planted on the DAS is 79000 ha. Is it an area of new afforestation or expected area of forest cover? What is the survival rate of those planted with new technology? Why the alternative to assign funds for forest shelterbelts and massives in the areas that suffer from dust storms from the DAS instead of planting on the DAS was not taken into consideration?
- Another point that remains not clear is why the PAD does not take into account the results of the Environmental Analysis. PAD and PIP suggest to use planting machines and tractors with trailers for planting. EA pointed, that "Places, where water or wind action may cause erosion, should be avoided and off-road traffic banned. The sites

sensitive to erosion should be studied in the field within the planning work. The environmental expert of the PMU should participate to the site selection of the access roads. He should also make sure that the road planning and constructing staff has maps of ecologically sensitive areas as well as knowledge how to operate in such areas. Field inspection and visual monitoring is required during the planning stage and at the early stages of earthworks (e.g. to control off-road traffic, erosion and excessive damage to nature and landscape)".And further to: "The environmental expert of the PMU should participate to the mapping and zoning of the environment (including ecologically sensitive areas) as well as to the planning of how to operate in such zones. The expert should take care that the results of botanical-geological research will be applied in selecting the species, choosing the patterns to be planted and managing the area. Field inspection is required before the major re-vegetation and forest management operations (to identify protected sites) and during them (e.g. to control nature protection, off-road traffic, erosion, excessive damage to valuable habitats and natural vegetation)". After detailed description of the obvious environmental risks (loss of soils, wind erosion, etc.) the environmental report stressed, that "The planting should take place by local people with hand-tools or by using light machinery. Ploughing should be banned and only rounded small holes can be made to the ground for saplings. It is not believed that the furrows could be enormously beneficial in accumulating more snow watering the saplings or helping to remove salts from the land surface. The field evidence shows that such furrows have increased erosion and initiated dune formation. The main objective of the activities should be to stabilize dunes and stop erosion. Also off-road traffic should be banned. Guidelines for Good Planting Practices are required and these can be developed at the beginning of the Project implementation." It is extremely strange that the risks described in the environmental report and mitigation activities are not stressed in the PAD and PIP. If it will be done, I think it can increase the innovativeness of the project. The "Guidelines for Good Planting Practices" is a very good idea which can mitigate the pointed risks especially if to be added with detailed dendrology plan and field consultations of planting teams provided by a number of experts of high qualification in planting and general ecology.

From the other hand, there are three approaches in this sub-component, that are extremely important for its sustainability and interesting for proposed activities:

- First (described in PIP) is the usage of satellite imagery processing algorithm for mapping. This approach permits an objective evaluation of the environmental changes on the DAS and can become an ongoing requirement for monitoring the condition of the Aral Seabed region.
- The second is the investments in the research station include civil works for buildings, including a dormitory, a laboratory and office, and stores. Besides the general functions, this station would allow visiting specialists from different institutes to undertake research projects at the station.
- The third is the exploring the potential for using pelleted seed for direct sowing of a range of species. This program can enlarge the list of plants used for DAS and make artificial development of vegetation more close to natural. Moreover, it will reduce the machine impact on the fragile environment of the DAS

Sub-Component IIB Improvement of Management of Saxaul Rangelands includes:

- thirty demonstration of a participatory saxaul rangelands program with each demonstration rehabilitating approximately 200 ha, and increasing access to water for grazing animals on an additional area of about 7500 ha
- herder agreements to enable restoration and development of degraded saxaul rangelands, community management of grazing pressure, and provision of water resources for associated rangelands.

Scientific and technical background of this subcomponent, that is presented in the working paper "Component IIb: Saxaul Rehabilitation and Rangeland Development", is very good. PAD and PIP are more poor (it is not a critical remark but a suggestion not to forget about this paper after the beginning of the work). In fact, this working paper is a detailed background and plan of action on the subcomponent activities. I am sure that all suggested activities, if they follow suggested plan, would be very effective. The only questions, which do not decrease the high evaluation of the total subcomponent, are the following:

- Arguments for the bcal herders to use distant pastures are not clear also. Why do they agree to go far from their settlements though at present time " about 6 percent of the grazed area is greater than seven kilometres from settlements, about 18 percent are between five and seven kilometres from settlements, and 76 percent is within five kilometres of settlements"? Distant pastures are obviously more productive after natural rehabilitation during last several years. Why they are not in use now and will be used after saxaul rehabilitation and rangeland development? What are attractive – new sources of fresh water or shadow from trees (seems to be unlikely) or smth else?
- There are no descriptions for methods of selection areas for saxaul planting. Newest scientific approaches to such selection demand to take into account the landscape properties. So, the best results of planting with great probability will be get on sandic lowlands, former ravines and gutters, dried river beds etc. I think that special scientific analysis needs to be done for this purpose and included in the framework of the subcomponent.
- In soviet time there were two main causes for saxaul degradation: (a) overgrazing and browsing of young plants; (b) use of saxaul for fuel. Nowadays the natural rehabilitation is more effective exactly in the distant areas with zero pressure. The working paper pointed: "Local communities understand the economic importance of saxaul. Community elders remember the way saxaul was and, despite laws, continue to cut saxaul because there is no alternative". What are the supposed alternatives for saxaul as a fuel far from settlements in future? How to force sheep not to browse plants?
- Two risks of social character of the sustainability of subcomponent outputs and outcomes needed to be explained: (a) "The younger generation members of the traditional livestock in families are not interested in herding, especially if it means traveling long distances to seasonal grazing lands. The young people want a "modern" lifestyle". So, what is the future of saxaul rangelands? Wage herders from backward countries or natural reserves? (b) "At the locations surveyed more than 55% of people are unemployed. These people were not specifically interested in the project because they are focused on their own survival. However if work opportunities arose then they would definitely be interested. They are desperate to earn money. If they could earn 10,000 to 12,000 Tenge per month they would be willing to help with planting shrubs and seeding. These families are so desperate that men and women are willing to work and, unusually, women are willing to work without their husbands". If the project finishes, is it an assurance that the same

people will not cut the saxaul for the same payment or even less but for another purpose (fuel, e.g.)?

As Component III is completely devoted to capacity building activities than its content is discussed in "***Capacity building aspects***" below.

Identification of the global environmental benefits and/or drawbacks of the project

The project has no global environmental drawbacks.

Global benefits pointed in the PAD Incremental Cost Analysis Summary do not sound as global after first reading. On the other hand, because of its more regional character, the project considered to get a number of regional benefits in the areas of combating desertification, sustainable land use, reforestation of degraded lands, biodiversity conservation, carbon sequestration. Capacity building activities of the project provide possibility to disseminate its positive results over the whole country and adjacent areas of neighbor countries. Kazakhstan occupies big territory including areas of global importance that makes possible to conclude that regional outcomes may have global benefits.

In particular, it is well proved in the project (taking into consideration the comments made above) that it "would have beneficial environmental impacts including reforestation of degraded lands, improved conservation and sustainable use of biodiversity in selected ecosystems, improved sheltering from wind and associated better air quality, and reduced use of potentially harmful pesticides. Environmental considerations are mainstreamed into the project objectives and components, and will be integrated in planning, implementation, and monitoring at both the local and national levels… Where possible the project will include the development of knowledge and monitoring of good environmental practice".

Thus I agree that "the project will result in certain global environmental benefits, such as reversing significant causes of land degradation and enhancing biodiversity/natural habitat in forest/woodland ecosystems, that justify GEF financing".

The GEF Alternative directs the project activities to expand its interventions in several areas, including international interchange, capacity building, forest and rangeland investments and targeted research, and environmental monitoring in order to realize the potential global benefits for sustainable forest and woodland management and biodiversity conservation from the existing interventions of the Baseline Scenario.

How the project fits within the context of the goals of GEF, as well as its operational strategies, programme priorities, GEF Council guidance and the provisions of the relevant conventions

The fitness of the project within the goals of GEF is well defined. The project is relevant mostly to the GEF focal area of land degradation, and also has some relevance to other GEF focal areas such as climate change, and ecosystem biodiversity in forests and semi-arid zones.

So, the project is closely corresponds to the main GEF objectives, and especially to the Land Degradation focal area. At the same time it follows the goals of the Biodiversity, Climate Change and Multifocal focal areas

The Project is consistent with the Operational Program on Sustainable Land Management (OP#15) and associated with the purposes of OP#1 (Arid and Semi-Arid Zone Ecosystems) and OP # 12 (Integrated Ecosystem Management)

The project expected GEF assistance in: expanded opportunities for international cooperation and capacity development on the management of transboundary resources and for learning from international experience in innovative forest/rangeland management including participatory approaches, and environmentally beneficial approaches; increased investments in accelerated vegetation of the DAS, rehabilitation of the saxaul rangelands and promotion of innovative forest rehabilitation/development through competitive grant subprojects; research and demonstration on appropriate species and practices for vegetation of the DAS and sustainable management of the saxaul rangelands, and environmental monitoring of land degradation trends.

The project meets the goals of several relevant international Conventions and the country is a signatory to them: Convention to Combat Desertification (CCD) in 1997, Convention on Biological Diversity (CBD) in 1994

Regional context

The project does not cover the entire land degradation agenda of the state but focus on model regions for pine and saxaul rehabilitation and on addressing key land degradation issues in forest lands. The rejection of a nation-wide project covering field-level activities in all the forests of Kazakhstan and the alternative choice of two model project sites are well grounded. So, the project has a broad regional context and, as it was mentioned above, the project is of more regional and even local importance than global.

In particular, the regional context of GEF alternative concerns primarily the support of initiatives for developing international cooperation on management of the transboundary (Kazakhstan-Russia) pine forest resources and transboundary (Kazakhstan – Uzbekistan) activities on the planting and biodiversity conservation on the DAS. The GEF resources will provide expanded training opportunities for the Kazakh foresters and will also support long-term consultancies and additional technical assistance needed to design and implement appropriate participatory approaches to land management. It would also provide additional support for research and demonstration, particularly in the refinement and adoption of vegetative practices and technologies.

In the regional context I have only one remark. It is desirable to prepare a timetable of the project in the way that would make the outcomes of the components #1 and #2 more advanced. I mean that the program of small grants of the component #3 is desired to take into account the risks and mistakes as well as positive results of the first two components. In this case the replicability of the project can be proved just during its implementation and local and regional context of these components would be increased up to the state level.

Replicability of the project (added value for the global environment beyond the project itself)

The replicability of the technologies used in the first two components seems to be limited as these model sites are very specific in environmental conditions. Otherwise they could be replicable in the similar conditions of pine forests on sand deposits in drought affected areas of Russian Federation, China, and Ukraine and on the dried beds of salt closed lakes. The saxaul planting is also replicable in the conditions of sand deserts.

From the other hand, the replicability of land management practice and capacity buildings is more probable and corresponds to the economic and social conditions of different countries with transitional or developing economy.

One more interesting feature of the project is the testing of the application of the forest and planting practice used in the northern countries (such as those used in Scandinavia) to the drought affected regions.

Sustainability of the project

The sustainability of the project is based mainly on different state and international strategies. Main of them are:

First is the National Environmental Action Plan which identifies seven key priorities problems that include, among others, degradation of pastures and arable lands and lack of forests and protected areas as natural habitats. Within the framework of this plan, a Joint Announcement of the Ministers of the Central Asian countries was signed stipulating the development of Central-Asia Regional Environmental Action Plan.

The second is the “Forest Code of the Republic of Kazakhstan” which regulates the forest use, protection and reproduction. The objective of the Forest Code is closely connected with conservation of biodiversity, regulation of relations in forestry economy with the purposes of maintenance of conditions for sustainable use of wood resources, their protection, safety and reproduction. The Regulation “About state forest protection” (2004) and the Decree “About prohibition of coniferous and saxaul trees cutting” (2004) have emphasized forest protection. Since April 2004 in Kazakhstan there is a 10-year moratorium on the cutting of coniferous and saxaul forests, which belong to the state forest fund. The National Academy of Sciences has prepared a "National Programme of Scientific Research on the Conservation and Sustainable Uses of Biological Diversity," which includes monitoring the state of the environment. National Action Plan (NAP) prepared in 1997 under the United Nations Convention to Combat Desertification (UNCCD) emphasizes environmental zoning, monitoring, improvement of nature protection, and rationalization of the natural resource use. The NAP specifies main zones of ecological stress and land degradation (including in and around the dry Aral seabed and the Irtysh River) and the main types of degradation (including windblown soil erosion, soil salinization, and forest destruction).

These and others governmental document with certainty prove the guaranteeing of the project sustainability on the state level.

The PAD describes the ways to support institutional sustainability and financial sustainability very well. The intention of continued expansion of the government investment program will enable the continuation of incremental field activities beyond the life of the project. Staff and routine operating expenses are already and will continue to be provided by the Government. Social and cultural sustainability at the village level will be addressed by ensuring representation of key groups in developing the participatory natural resource management plans.

Critical risks and possible controversial aspects as well as their mitigation are also well defined through social and institutional analysis and the analysis on community involvement, which were both based on stakeholder analysis and field surveys/

Another sort of project integrated sustainability could be supported by the detailed M&E plan which can be elaborated before project start or at the initial stage. Although PAD refers to that the Environmental Analysis "…identifies a number of actions and mitigation measures to address the potential adverse impacts of the project …" and "… includes standard measures for addressing the direct physical impacts of project activities (e.g. planting, construction, roadwork, etc.) in environmental management guidelines…" and "…also includes actions/measures that should enhance the environmental and social benefits of the project…" and "…identifies a number of key ecological and social indicators for monitoring project impacts …" etc., one can find in the presented documents only a general description of the Results Framework and Monitoring. But the project contains a number of activities that have to be realized before starting other activities. In other words the project pipeline bears in some cases a "chain-like" character that needs special evaluation for risks and critical points for decision making. These points do not refer straight to the annual or midterm reports but need to be assessed and predicted in the project framework. The possible way of the creation of such a detailed M&E plan is the beginning with the environmental, social and economic assessment which has to be executed on the base of different exact indicators which should be used in future procedures of M&E. In other words, the project needs some kind of “baseline” to compare expected results with the “zero-point”. Another possible way is suggested in the Environmental Analysis as an Environmental Management Plan. The objectives of the EMP are very well defined and correlated with my suggestion. The only objection to this sort of plan is that in the proposed form it is more "environmental" than "management". So it need to be expanded to institutional and management activities.

Secondary issues

Linkages to other focal areas

The project includes clear linkages to biodiversity conservation and to carbon management opportunities

Linkages to other programmes and action plans at regional or sub-regional levels

The project links to the National Environmental Action Plan, which has been prepared in 1997 with assistance of the World Bank, UNDP, and EU-TACIS. National Action Plan to Combat Desertification the CCD. The project is also consistent with the action plan for conservation and sustainable use of forest ecosystems in the national Strategy and Action Plan on Conservation and Sustainable Use of Biodiversity Conservation (1999)

The project would work in partnership with GTZ on the vegetation of the dry Aral seabed. GTZ plans to support technical cooperation activities of vegetation of the dry Aral Seabed in both Kazakhstan and Uzbekistan in 2005 and 2006. The Bank-financed project also continue to liaise with the Kazakhstan working group on the United Nations Convention to Combat Desertification, and with donors, such as the United Nations Development Programme, the Asian Development Bank, and GTZ, which are addressing other land degradation issues in Central Asia.

Reviewer comment:
The purport of annex 2 with the list of projects is not clear. At least the brief analysis of linkages between projects is necessary.

Other beneficial or damaging environmental effects

The project has no negative environmental impacts. On the contrary, it provides significant environmental and social benefits that outweigh any potential risks. The potential adverse impacts identified can be effectively addressed through careful preventive actions or mitigation measures. Moreover, the project will promote environmentally sound integrated pest management where feasible

All risks that can provide adverse environmental or social impacts are clearly pointed in the PAD or other related documents (pre-PAD reports), especially in the EA. Some of them are mentioned also in this review. As a number of risks or uncertainties are scattered throughout project documents, it should be necessary to structure and classify them on the initial stage of the project implementation or before. Careful risk control and detailed M&E plan can mitigate negative results to zero through the capacity building for project management to change work plans according the development of the project. The table of critical risks presented in the PAD is not sufficient enough for such control.

Degree of involvement of stakeholders in the project

The project defines key stakeholders as rural people living in and around the forests, livestock-herder families, forest users, forestry staff, as well as environmental NGOs. Local people seemed to play the leading role in the project implementation on-the-ground. Through participatory management local people would obtain rights to a share of forest products in exchange for undertaking specific protection and/or management responsibilities, and with a provision for the development of livelihoods alternatives. The role of the government is high in the management and sustainability of the project and especially – in the component III. The role of women traditionally is weak but it hopes to grow especially in the "saxaul" sub-component. The proposed role of NGOs in the project is not described.

Capacity-building aspects

Capacity building aspects appear throughout the project. Some of them (on the local level) were mentioned above under discussion of components I and II. Main remarks there were addressed in this case to the sustainability of outcomes and outputs (nurseries, public agreements, employment etc.) after finalizing of planting.

The component III is totally devoted to capacity building aspects on the regional/state level. GEF alternative of this component will support a number of the activities of national institutions necessary to build institutional capacity for improved planning and management of forest and woodland resources, including mapping and surveying needed to better understand and assess forest sector resources, expanded monitoring capabilities and information systems. In addition, GEF resources will finance limited investments in innovative forest rehabilitation and management.

Remarks:

- As far as computer techniques and current GIS software usually become obsolete in several years, what measures should be done to upgrade the Forest Management Information System after the end of the project? Does FHC have enough resources for this purpose?
- Grant Programme is a very good way to enlarge public involvement and awareness. The only remark here is the recommendation to add the implementation plan of this subcomponent with interim and final analysis of outcomes and outputs of the programme that have to be supposed in the Operation Manual (or another related document) at the initial stage of its implementation.

Innovativeness of the project.

The project is not particularly innovative at the global level as it refers in general to the national objectives. The usage of some technologies for planting and nursering can be considered as innovative at the local or regional level. Also some researches can bring innovative results, e.g. adaptation of pine planting technologies to drought-affected conditions, proportioning of plants for rehabilitation of the DAS environment, direct sowing, etc.

Other comments and questions

- The PAD pointed that in addition to mapping "… a socioeconomic evaluation will be undertaken at mid term and completion.." I think it is necessary to undertake such evaluation at the end of the first year of the project as well (maybe in brief form). The reason is that a number of measures must be done during first year to finalize plans, programs and strategies. Public acceptance and economic eligibility of these plans before their launching are very important points.
- Detailed outcomes and outputs indicators must be elaborated on the initial stage. Current indicators such as "20,000 ha replanted and 21,000 ha direct seeded" are available but not sufficient, as far as the main purpose of activity is not to spend money for planting but to rehabilitate lands and provide socio-economic sustainability. Another kind of indicators such as "Initiation of restoration evident" is very poor and needs to be developed.
- The illegal logging could not be stopped only by public agreements and consultations, as far as organized crime is more equipped and organized. Is it possible to find resources in the project to equip foresters with necessary facilities to prevent illegal logging?
- What is the perfect title of the Component III: "Capacity Building of National Institutions" or " National Institutional Development and Project Management"? Different titles are uses in different parts of PAD and PIP.

Responses to STAP Review Comments

General Observations:

The project preparation team is pleased with the STAP reviewer's conclusions, in such statements as the following, that project activities are eligible for GEF financing:

- "*... GEF alternative provides the project with more global effects, because it strengthens the sounding of local and regional activities as a part of global effort on the relevant environmental issues*." (p. 1, para. 1)
- "*... I consider the project is eligible in the framework of GEF Operational Program on Sustainable Land Management (OP#15) as well as associated with the purposes of OP#1 (Arid and Semi-Arid Zone Ecosystems) and OP # 12 (Integrated Ecosystem Management)*." (p. 1, para. 4)
- "The *project has no global environmental drawbacks.*" (p. 6, para.3)
- *"Kazakhstan occupies big territory including areas of global importance that makes possible to conclude that regional outcomes may have global benefits*." (p. 6, para. 4)
- *"Thus I agree that 'the project will result in certain global environmental benefits, such as reversing significant causes of land degradation and enhancing biodiversity/natural habitat in forest/woodland ecosystems, that justify GEF financing*". (p. 7, para. 2)

The STAP reviewer states that "*the GEF grant seems to be directed mostly on the capacity buildings through the strengthening of local communities, implementation of the community developed local action plans, which take into account the local environmental issues as the main conditions for sustainable development. New capacity buildings will promote (at the level of local model) more balanced exploitation of natural resources, reduce the human impact due to the new environmental friendly technologies of land management and create conditions for their conservation and rehabilitation*" (p. 1, para. 3) The Bank team would like to clarify that the bulk of the GEF grant in fact would finance on-the-ground investments in vegetation of the DAS, rehabilitation/management of the saxaul rangelands, and innovative forest activities in other areas, as well as targeted research on appropriate species and improved technologies for planting on the DAS.

Responses to Specific STAP Reviewer Comments:

Rehabilitation of the Irtysh Pine Forests

Comment 1. *How to consider the following text in the PAD: "There is an additional sub-component that will be activated after the MTR, if still considered necessary. This is improvement to the site preparation process. Currently the debris left after salvage harvesting of the burnt forest is heaped by bulldozers, either into heaps and burnt away or pushed into windrows and left to rot. The project provides for the testing of rolling chopper units that shatter the debris and incorporate it into the surface soil, thus facilitating the operation of planting machines and also hastening breakdown of the debris and release of nutrients into the soil. Conservation of the slender nutrient capital of sandy soils in this way is essential to maintain productivity in the long term"?. I mean first of all the words "if still considered necessary". Is there somebody against? What are the arguments? What are the reasons to wait? If there are some needs for special scientific researches on this, previous or similar items, it is necessary to point them in the text of PAD.* (p. 2, para. 5)

Response. This question may result from a minor misunderstanding of the text. Certainly there is no one opposed to improving site preparation in the burnt areas of the Irtysh pine forest. However, the local forestry staff has only recently changed from heaping and burning post-harvesting debris to pushing debris into windrows and not burning it. This is an improvement that needs to be consolidated before moving on to the new concept and new technology of rolling choppers to conserve organic matter *in situ*. Introducing the use of choppers is part of a phased approach the project takes to improving plantation management practices, which will be evaluated at mid-term and certainly undertaken if appropriate.

Comment 2. *In the table 4.1. the project level of planting will rise up to 2012 year from 2000 to 10000 ha and of seedling – from 0 to 15000 ha. So, by a combination of improved technology for planted seedlings and direct sowing the entire burnt area will be reforested in 10 years, rather than the 70 years that the current methods will require. The question is what is the follow-up of this improved technology after 10 years? Who will consume the production of nurseries after this period? What local people involved in the process should do if the output of nurseries will decrease? I guess, that it is necessary to include in the activities of the project (e.g. in the component III) the task to assess the total possible consumption of this production in the region and adjacent areas in order to fix the upper level.* (p. 2, para. 6)

Response. The STAP reviewer is correct that if all the new techniques introduced by the project work well, seed supply is no problem, and future forest fire losses are small, the project will reforest all the burnt forest area in about 10-12 years. Should this be the case, however, there remains a large area of currently unused grassland adjoining the forest that could be afforested, if the Government decides to do so. Whether the grassland will still be idle in 10 years time will depend on the economic and social changes that take place in the area. At the same time, improved management of the forest through regular thinning programs promoted by the project would provide employment for an increasing number of people in the local area. While some transitional arrangements may be necessary, this should not be a serious problem.

Comment 3. *It has been mentioned in few reports preceding PAD that visual monitoring from aircrafts or helicopters is the most effective method to detect fires. But this method is expensive and, I guess, it was the reason to stay on the lookout towers. Another relatively cheap method could be also a system of space monitoring of fires. But the effectivity of this system is visible at least on the regional level. So, I wish to recommend to think on this methodology in the component III but use certain areas of the Irtysh forest as model testing areas.* (p. 3, para. 3)

Response. The project, in fact, will evaluate the potential for using some sort of remote sensing system (e.g. the Modis-Terra fire algorithm used in Siberia) for fire detection. To be effective, however, these systems require access to real time satellite imagery and good data processing facilities, both of which can be expensive. Furthermore, experience in Australia at least suggests that these systems are of no use for rapid fire attack as their response time is too slow. They are invaluable, on the other hand, during a major fire event when smoke blots out all other detection systems.

Comment 4. .. *But at present economic situation it is a risk that usufruct rights of the community can be usurp by the person or group of persons acting on behalf of the whole community (even being formally elected). Taking in mind that in conditions of total poverty the forestry is "a sweet*

piece of cake", it is necessary not to forget that here is a window for corruption, especially in the distribution of "rights to be employed for specified tasks in the nominated forest area". So, I support the idea, but I also support that it might be only a thorough feasibility study conducted by independent consultants with deep involvement of different groups of the local people. The application of this idea must be very careful in order to provide benefits to the local communities entirely. Otherwise project can face with the threat of acts of sabotage. (p. 3, para. 4)

Response. The STAP reviewer raises a legitimate concern about the potential for abuse of the forest partnership system promoted by the project. Recognizing this risk, the project PAD and PIP, in fact, already incorporated his suggestion that there be a analysis of this issue by independent consultants as part of the detailed design during the first year of the project.

Planting on the Dry Aral Seabed

Comment 5. … *the preparation team was unable to find evidence of adverse impacts of the dust, salt, and pesticide deposition on human health that could be used to justify the project…" "Furthermore, the main sources of this dust appear to be from abandoned agricultural fields along the former coastline, and from the salt covered refractory (solonchak) soils of the DAS. To date, vegetation of the DAS at significant scales has not been feasible on the refractory soils, which cover at least 20% of the DAS. This topic requires further research. Natural and human-assisted vegetation is feasible on the portions of the DAS with sandy soils, but these are not a major source of the salt and dust. However, it appears that vegetated areas on sandy DAS soils does help reduce wind erosion on a more localized scale". So, health hazard is not evident, refractory soils do not allow to grow plants, and friendly surfaces are overgrown already being not a source of salt and dust. In these conditions what is the purpose to organize a scaled planting experiment? One can suppose that new planting technologies used in the GTZ project or somewhere else provide more benefits. But there are no arguments in the project documents that these technologies are more effective. Moreover, the Biodiversity report informs that "in the period of 1988 – 1994 afforestation of the dried sea bed on the square of 54795 ha was made. Currently 12920 ha of them are covered with forests. Currently 30% of one and five year sapling can grow". Is 30% an effective share or not? The total expected area planted on the DAS is 79000 ha. Is it an area of new afforestation or expected area of forest cover? What is the survival rate of those planted with new technology? Why the alternative to assign funds for forest shelterbelts and massives in the areas that suffer from dust storms from the DAS instead of planting on the DAS was not taken into consideration?* (p. 4, para. 4)

Response: The technologies for planting on the DAS proposed by the project are based on some 15 years of applied research and successful experience on the DAS by recognized international experts, i.e. Kaverin in Kazakhstan and Novitski in Uzbekistan. To this long record must be added the more recent research and field operations by the successful GTZ project in Uzbekistan. The preparation team certainly appreciates the complexity of the soils and landscape on the DAS and based its conclusions on numerous field inspections with Kaverin and Novitski and with staff of research institutes in Almaty. While the project recognizes the need for ongoing research on the DAS to improve vegetative techniques (some of which will be financed by the GEF grant), the history of past research resulting in successful vegetation of areas of the DAS provides sufficient basis for the proposed project interventions. The environmental assessment is still in the process of being finalized. If it does provide the above clarification, then at least the Project Implementation Plan will explain why EA's arguments are not valid. Regarding project support for shelterbelts and massives, the social analysis found that this was not a high priority of

local people compared with other public investment needs. In any case, where local people do want to establish such shelterbelts, this could be considered for support through the competitive grants program.

Comment 6: *Another point that remains not clear is why the PAD does not take into account the results of the Environmental Analysis. PAD and PIP suggest to use planting machines and tractors with trailers for planting. EA pointed, that "Places, where water or wind action may cause erosion, should be avoided and off-road traffic banned. The sites sensitive to erosion should be studied in the field within the planning work. The environmental expert of the PMU should participate to the site selection of the access roads. He should also make sure that the road planning and constructing staff has maps of ecologically sensitive areas as well as knowledge how to operate in such areas. Field inspection and visual monitoring is required during the planning stage and at the early stages of earthworks (e.g. to control off-road traffic, erosion and excessive damage to nature and landscape)".And further to: "The environmental expert of the PMU should participate to the mapping and zoning of the environment (including ecologically sensitive areas) as well as to the planning of how to operate in such zones. The expert should take care that the results of botanical-geological research will be applied in selecting the species, choosing the patterns to be planted and managing the area. Field inspection is required before the major re-vegetation and forest management operations (to identify protected sites) and during them (e.g. to control nature protection, off-road traffic, erosion, excessive damage to valuable habitats and natural vegetation)". After detailed description of the obvious environmental risks (loss of soils, wind erosion, etc.) the environmental report stressed, that "The planting should take place by local people with hand-tools or by using light machinery. Ploughing should be banned and only rounded small holes can be made to the ground for saplings. It is not believed that the furrows could be enormously beneficial in accumulating more snow watering the saplings or helping to remove salts from the land surface. The field evidence shows that such furrows have increased erosion and initiated dune formation. The main objective of the activities should be to stabilize dunes and stop erosion. Also off-road traffic should be banned. Guidelines for Good Planting Practices are required and these can be developed at the beginning of the Project implementation." It is extremely strange that the risks described in the environmental report and mitigation activities are not stressed in the PAD and PIP. If it will be done, I think it can increase the innovativeness of the project. The "Guidelines for Good Planting Practices" is a very good idea which can mitigate the pointed risks especially if to be added with detailed dendrology plan and field consultations of planting teams provided by a number of experts of high qualification in planting and general ecology.* (p. 4, para. 5)

Response: There is not as much disagreement here as there might appear at first reading. First, the PAD the STAP reviewer read fails to take into account some of the recommendations of the EA in large part because the draft EA was only received very late in project preparation. Certainly the preparation team agrees with the need for and has incorporated environmental expertise into the PCU, i.e. a forester/ecologist who will oversee the mapping of ecologically sensitive areas and participate in the planning and implementation of project activities on the DAS. Second, where the team disagrees with the EA and the STAP reviewer is on the use of planting machines and tractors in planting activities on the DAS. The most recent experience has shown that there is no problem with using planting machines on the DAS. They were used in the past without negative impacts and the GTZ project in Uzbekistan is using them now with little or no adverse effect on environmental conditions. The preparation team does not believe that the

DAS is the extremely fragile environment that the EA says it is, so the project should not have to go to such lengths to avoid any soil surface disturbance. In fact, the disturbances resulting from planting operations are trivial compared to the natural forces taking place on the DAS all the time. Furthermore, the scientific fact is that the furrows used in site preparation on the DAS have been proven to increase plant survival and early growth. Third, the recommended "Guidelines for Planting Practices" for the field operations will be prepared under the project in order to minimize any adverse environmental impacts from planting, but they will be based on good science and the extensive experience accumulated in planting on the DAS.

Improvement of Saxaul Rangeland Management

Comment 7: *Arguments for the local herders to use distant pastures are not clear also. Why do they agree to go far from their settlements though at present time " about 6 percent of the grazed area is greater than seven kilometres from settlements, about 18 percent are between five and seven kilometres from settlements, and 76 percent is within five kilometres of settlements"? Distant pastures are obviously more productive after natural rehabilitation during last several years. Why they are not in use now and will be used after saxaul rehabilitation and rangeland development? What are attractive – new sources of fresh water or shadow from trees (seems to be unlikely) or something else?* (p. 5, para. 4)

Response: After the early 1990s the livestock population on the saxaul rangelands plummeted. This meant that the area required for grazing contracted substantially. This contraction was reinforced by a concurrent deterioration in infrastructure. Existing livestock watering wells fell into disrepair and local livestock owners did not have the resources to repair them. Therefore, large areas of rangeland, often with better quality forage resources, could not be used. This problem was compounded by the fact that livestock owners did not have the resources to transport or move the livestock the necessary distances. But, the lack of functional livestock watering wells also limits the use of even relatively nearby grazing lands. The current trends indicate that livestock numbers are increasing once again. This will increase pressure to utilize the nearby, unused (unwatered) and more distant grazing lands again. The re-establishment of watering points (along with necessary user rights) promoted by the project will be a powerful incentive for extension of the grazing areas. Improvement of shade is likely to be a factor in some of these sites but not in the short term because of the time it takes to establish a shade-size tree or shrub. The establishment of saxaul or other shade-producing trees or shrubs in the "associated rangeland areas" will be a development option suited to some locations.

Comment 8: *There are no descriptions for methods of selection areas for saxaul planting. Newest scientific approaches to such selection demand to take into account the landscape properties. So, the best results of planting with great probability will be get on sandic lowlands, former ravines and gutters, dried river beds etc. I think that special scientific analysis needs to be done for this purpose and included in the framework of the subcomponent.* (p. 6, para. 2)

Response: In selecting the areas for saxaul planting, the project will rely on the extensive local knowledge on site characteristics suitable for saxaul planting. The project recognized the need to map the extent of the rangeland areas suited to saxaul rehabilitation, as well as for the other project activities, linking such information to administrative and political practicalities as appropriate. This mapping of the saxaul rangelands has been proposed as an essential pre-project implementation activity to be carried out in early to mid 2005.

Comment 9: *In soviet time there were two main causes for saxaul degradation: (a) overgrazing and browsing of young plants; (b) use of saxaul for fuel. Nowadays the natural rehabilitation is more effective exactly in the distant areas with zero pressure. The working paper pointed: "Local communities understand the economic importance of saxaul. Community elders remember the way saxaul was and, despite laws, continue to cut saxaul because there is no alternative". What are the supposed alternatives for saxaul as a fuel far from settlements in future? How to force sheep not to browse plants?* (p. 6, para. 3)

Response: The increasing availability of alternative fuels (e.g. natural gas) in the larger settlements on and around the saxaul rangelands should reduce at least some of the pressure on saxaul for fuel purposes. In areas far from these settlements, however, there remain few good alternatives to saxaul, but the pressure for fuel wood should not be significant in these areas. As for grazing, the available information suggests that saxaul does not rate high in palatability for grazing animals compared to other rangeland species. The implication of this, of course, is that if grazing pressures are not excessive, and more preferred alternatives are available, then livestock will be less likely to eat saxaul. Grazing pressures were high in previous times, resulting in adverse impacts on the saxaul. The primary objective of this component is to introduce sustainable, resource-based management of the rangelands. Controlling grazing pressures is fundamental to that.

Comment 10: *Two risks of social character of the sustainability of subcomponent outputs and outcomes needed to be explained: (a) "The younger generation members of the traditional livestock in families are not interested in herding, especially if it means traveling long distances to seasonal grazing lands. The young people want a "modern" lifestyle". So, what is the future of saxaul rangelands? Wage herders from backward countries or natural reserves? (b) "At the locations surveyed more than 55% of people are unemployed. These people were not specifically interested in the project because they are focused on their own survival. However if work opportunities arose then they would definitely be interested. They are desperate to earn money. If they could earn 10,000 to 12,000 Tenge per month they would be willing to help with planting shrubs and seeding. These families are so desperate that men and women are willing to work and, unusually, women are willing to work without their husbands". If the project finishes, is it an assurance that the same people will not cut the saxaul for the same payment or even less but for another purpose (fuel, e.g.)?* (p. 6, para. 4)

Response: What the future holds for the saxaul rangelands is a good question. Much depends on the evolution and economic development of the local communities on the rangelands and the development options available to them. It is possible that in the future there will be fewer livestock owners with more livestock and "specialist" herders will be hired by individuals or groups of livestock owners to manage the grazing of their livestock both at nearby and more distant grazing lands. As evidence of this, there is already local discussion of forming grazing cooperatives for managing livestock. As for the economic pressures leading to future cutting of saxaul for fuelwood, unfortunately there is no assurance the project can give that this will not happen. However, one of the bases of this component, fundamental to its viability, attempts to address this issue. By granting some form of user rights to the developed rangeland resources to the participating local groups (e.g. herders, communities), the project should encourage these groups to develop a direct interest in and assume primary responsibility for protecting and using these resources rationally. This would include the rangeland forage resources and the fuelwood resources.

Regional Context

Comment 11: *In the regional context I have only one remark. It is desirable to prepare a timetable of the project in the way that would make the outcomes of the components #1 and #2 more advanced. I mean that the program of small grants of the component #3 is desired to take into account the risks and mistakes as well as positive results of the first two components. In this case the replicability of the project can be proved just during its implementation and local and regional context of these components would be increased up to the state level.* (p. 8, para. 3)

Response: The STAP reviewer makes an interesting point. Although it would be difficult to advance the outcomes of the first two components in order to incorporate lessons learned from them in the competitive grants program, in reality full implementation of the grants program will only begin to take place in the years following the first year of the project (i.e. after appointment of the Grant Board, development of the operational manual, preparation and evaluation of grant applications), so the grants program should be able to benefit from lessons learned by the project in its other components in the initial years of project implementation.

Sustainability of the Project

Comment 12: *Another sort of the project integrated sustainability could be supported by the detailed M&E plan which can be elaborated before project start or at the initial stage. Although PAD refers to that the Environmental Analysis "…identifies a number of actions and mitigation measures to address the potential adverse impacts of the project …" and "… includes standard measures for addressing the direct physical impacts of project activities (e.g. planting, construction, roadwork, etc.) in environmental management guidelines…" and "…also includes actions/measures that should enhance the environmental and social benefits of the project…" and "…identifies a number of key ecological and social indicators for monitoring project impacts …" etc., one can find in the presented documents only a general description of the Results Framework and Monitoring. But the project contains a number of activities that have to be realized before starting other activities. In other words the project pipeline bears in some cases a "chain-like" character that needs special evaluation for risks and critical points for decision making. These points do not refer straight to the annual or midterm reports but need to be assessed and predicted in the project framework. The possible way of the creation of such a detailed M&E plan is the beginning with the environmental, social and economic assessment which has to be executed on the base of different exact indicators which should be used in future procedures of M&E. In other words, the project needs some kind of "baseline" to compare expected results with the "zero-point". Another possible way is suggested in the Environmental Analysis as an Environmental Management Plan. The objectives of the EMP are very well defined and correlated with my suggestion. The only objection to this sort of plan is that in the proposed form it is more "environmental" than "management". So it need to be expanded to institutional and management activities.* (p. 9, para. 5)

Response: The final version of the PAD will reflect the thrust of these comments regarding the EMP. Because the first draft of the EA arrived very late in the project preparation process, the version of the PAD that the STAP reviewer read did not fully reflect the findings and recommendations of the EA. Furthermore, the project preparation team recommended that the consultant significantly strengthen the Environmental Management Plan (EMP) included in the first draft EA along the lines of the STAP reviewer's comments, i.e. to include more on environmental "management" of potential project impacts, oversight of environmental measures,

monitoring of environmental indicators, etc. This includes appropriate technical capacity within the PCU (i.e. a forester/ecologist), as well as technical assistance and capacity building as needed. The team also asked the consultant to strengthen the monitoring plan for the EMP by identifying critical environmental and social indicators (beginning with a baseline as the STAP reviewer suggests) for evaluating impacts of the project. Regarding the management aspects, the PIP will include an Annex elaborating the guidelines for monitoring and evaluation, including social, institutonal, and management aspects.

Linkages to Other Programs

Comment 13: *The purport of annex 2 with the list of projects is not clear. At least the brief analysis of linkages between projects is necessary.* (p. 10, para. 4)

Response: This annex was not complete in the PAD version read by the STAP reviewer. It now contains electronic links with publicly available information on each project. However, the annex does meet the specified one page format in accordance with World Bank guidelines. A comparable but longer section in the PIP, however, contains further annotation, noting which project-related sectors have been or would be addressed by the projects listed, and includes references to additional projects outside of Kazakhstan which are also relevant.

Other beneficial or damanging environmental effects

Comment 14. *All risks that can provide adverse environmental or social impacts are clearly pointed in the PAD or other related documents (pre-PAD reports), especially in the EA. Some of them are mentioned also in this review. As a number of risks or uncertainties are scattered throughout project documents, it should be necessary to structure and classify them on the initial stage of the project implementation or before. Careful risk control and detailed M&E plan can mitigate negative results to zero through the capacity building for project management to change work plans according the development of the project. The table of critical risks presented in the PAD is not sufficient enough for such control.*

Response. The reviewer's comment on careful risk control is well taken. However, the table of risks presented in the PAD is not intended to cover the full range of project risks identified by the reviewer. Most of these are better handled in the context of the particular project preparation analyses where they are identified and addressed (e.g. the environmental risks in the EA/EMP, the social risks in the social assessment, etc.). Furthermore, the monitoring and evaluation guidance in the relevant PIP Annex will further address risk control, and provide a mechanism to identify new risks if and when they arise.

Degree of involvement of stakeholders in the project

Comment 15. *The proposed role of NGOs in the project is not described.*

Response. The project will likely make use of existing training capacity among NGOs to help build specialist and beneficiary skills for the implementation Forest Partnership Development and the Improvement of the Saxaul Rangeland Management subcomponents, with details to be decided during the first year of the project. NGOs will also be among the stakeholder audiences for the policy and information activities under the national component. NGOs also are eligible to develop proposals and if selected, implement, subprojects under the Competitive Grants Program. The project design includes extensive support for FHC and associated agencies to

improve their communications capacity with all stakeholders, including NGOs. A small number of NGO representatives will also be included as members of the Project Advisory Committee.

Capacity building aspects.

Comment 16: *As far as computer techniques and current GIS software usually become obsolete in several years, what measures should be done to upgrade the Forest Management Information System after the end of the project? Does FHC have enough resources for this purpose?* (p. 11, para. 4)

Response: It is true that information systems continue to evolve rapidly and that FHC will have to keep up with this evolutionary process in the management of its FMIS and other systems. In reality, it is unlikely that the FMIS will be completed by the end of the project. The FHC, however, should be sufficiently set on a path with the FMIS that will go on, without requiring substantial additional resources, for a long time after project completion.

Comment 17: *The Grant Programme is a very good way to enlarge public involvement and awareness. The only remark here is the recommendation to add the implementation plan of this subcomponent with interim and final analysis of outcomes and outputs of the programme that have to be supposed in the Operation Manual (or another related document) at the initial stage of its implementation.* (p. 11, para. 5)

Response: As noted above, the project will attempt to ensure that the competitive grants program incorporates lessons as they are learned by the project into its subprojects and grant operational manual. The fact that the competitive grants specialists will be located in the PCU will ensure close collaboration and exchange with the project's technical specialists.

Innovativeness of the project

Comment 18. *The project is not particularly innovative at the global level as it refers in general to the national objectives. The usage of some technologies for planting and nursering can be considered as innovative at the local or regional level. Also some researches can bring innovative results, e.g. adaptation of pine planting technologies to drought-affected conditions, proportioning of plants for rehabilitation of the DAS environment, direct sowing, etc.*

Response. While the technical aspects represent adaptation of existing practices from elsewhere to circumstances within Kazakhstan, the project is innovative in its institutional approach, especially in the context of a CIS country. The project reflects an innovative emphasis on the results-orientation and cost-effectiveness of public expenditures on environmental goods, and a learning by doing approach to acquiring the new skills and behavior needed to achieve this outcome that has global as well as national relevance. Furthermore, the project will introduce innovative approaches to participatory forest and rangeland management in Kazakhstan, including the exchange of usufruct rights for sustainable management responsibilities with local populations.

Other comments and questions.

Comment 19.: *The PAD pointed that in addition to mapping "… a socioeconomic evaluation will be undertaken at mid term and completion.." I think it is necessary to undertake such evaluation at the end of the first year of the project as well (maybe in brief form). The reason is that a number of measures must be done during first year to finalize plans, programs and*

strategies. Public acceptance and economic eligibility of these plans before their launching are very important points. (p. 11, para. 7)

Response: With social assessment and community involvement reports already completed during project preparation, the project preparation team does not believe a socio-economic evaluation in the first year of the project is necessary. The project's planned evaluations at mid-term and project completion should be sufficient.

Comment 20: *Detailed outcomes and outputs indicators must be elaborated on the initial stage. Current indicators such as "20,000 ha replanted and 21,000 ha direct seeded" are available but not sufficient, as far as the main purpose of activity is not to spend money for planting but to rehabilitate lands and provide socio-economic sustainability. Another kind of indicators such as "Initiation of restoration evident" is very poor and needs to be developed.* (p. 11, para. 8)

Response: The project team has followed World Bank guidance for a results framework which highlights the most significant indicators at a summary level, and avoids an elaborate set of indicators that would be expensive or impractical, and would not be used effectively to assess and improve performance. This results framework is however, backed by evaluation analysis that will provide detailed elaboration. For example, the "initiate of restoration evident" will be evaluated through a detailed remote sensing, ground truthing, and analysis exercise that will take place in 2005, as well as at the MTR and completion will further measure the nature and extent of changes in the conditions of various project areas. Terms of reference for the 2005 study are already available, and the PIP will include TOR for subsequent exercises. The reference to "20,000 ha replanted and 21,000 ha direct seeded" is listed as just one element of more elaborately described *output* indicator for component IA, while the *outcome* indicators do, in fact, address land and socio-economic impacts.

Comment 21: *The illegal logging could not be stopped only by public agreements and consultations, as far as organized crime is more equipped and organized. Is it possible to find resources in the project to equip foresters with necessary facilities to prevent illegal logging?* (p. 12, para. 1)

Response: The project does provide resources to equip foresters with vehicles and other equipment necessary to increase patrols in order to prevent illegal logging operations. Further, the project will provide more employment in local communities to help reduce the economic incentives for illegal forest activities.

Comment 21: *What is the perfect title of the Component III: "Capacity Building of National Institutions" or "National Institutional Development and Project Management"? Different titles are used in different parts of PAD and PIP.* (p. 12, para. 2)

Response: The correct title is: "Capacity Building of National Institutions".