PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE

Report No.: AB1631

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Irrigation and Drainage Community Development Project Additional Financing</th>
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</thead>
<tbody>
<tr>
<td>Region</td>
<td>EUROPE AND CENTRAL ASIA</td>
</tr>
<tr>
<td>Sector</td>
<td>Flood protection (60%); Irrigation and drainage (40%)</td>
</tr>
<tr>
<td>Project ID</td>
<td>P095551</td>
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<tr>
<td>Borrower(s)</td>
<td>GEORGIA</td>
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<tr>
<td>Implementing Agency</td>
<td>Ministry of Agriculture Attn: Mr. Constantine Mgeladze</td>
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<tr>
<td>Environment Category</td>
<td>[ ] A [X] B [ ] C [ ] FI [ ] TBD (to be determined)</td>
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<tr>
<td>Date PID Prepared</td>
<td>May 24, 2005</td>
</tr>
<tr>
<td>Date of Appraisal Authorization</td>
<td>May 25, 2005</td>
</tr>
<tr>
<td>Date of Board Approval</td>
<td>June 30, 2005</td>
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1. Country and Sector Background

Georgia is a small Caucasus country with a population of 5.5 million people. The country relies heavily on agriculture, which provided 18% of Georgia’s GDP and 56% of employment in 2003. Because of its relative size and role in employment, economic growth in the agriculture sector is critical to Georgia’s overall economic growth and prosperity.

Georgia has been hard hit by major flooding since mid-April, especially in the east and west of the country. Floods are typically caused by a combination of snowmelt and rainfall. This year, with a large snowpack, high spring temperatures that cause rainfall at higher elevations and fast snowmelt, and heavy and prolonged rainfall over large sections of the catchment areas of several of the major river systems, the floods reached levels estimated up to one in hundred years return periods in certain rivers. Fortunately, only few human casualties have been reported, but the natural disasters caused destruction or damage of infrastructure, including irrigation headworks and river flood embankments, cut off large parts of affected districts, and affected thousands of hectares of farmlands, often in the poorest areas of the country. The flooding is still ongoing, and detailed data about the damage is still being compiled. The government has pledged to allocate GEL 20 million for immediate flood relief and compensation of affected people, and rehabilitation works to roads and bridges, but much more will be needed especially for longer-term rehabilitation of damaged infrastructure, which is why the government appealed to the international community for assistance in the rebuilding efforts.
A number of major irrigation works under management of the Department of Amelioration Scheme Management (DASM) were damaged by the floods. Some structures are not able anymore to divert irrigation water, while others are now unstable, with a high risk of collapsing during next floods, which would then take large irrigation command areas out of production. The poor state of the infrastructure also poses risk to nearby infrastructure, including bridges and roads, as well as houses.

Two distinct types of flooding were reported, namely flooding in the lowlands and flooding in mountainous areas. The flooding in the lowlands of Western Georgia destroyed or severely weakened sections of embankments along several rivers, including the major Rioni and Tskhenistskali Rivers. DASM is in charge of maintenance of these river embankments, but currently lacks the budget for the proper upkeep. The condition of stretches of embankments is such that, without urgent attention, flooding and inundation could become a recurring event, even when floods do not reach extreme levels. One impact of this would be that it would put at risk the drainage schemes that are being rehabilitated with funding from Irrigation and Drainage Community Development Project (IDCDP).

Floods in the mountainous areas have a different character, with severe short-duration flash floods coming down the mountainous streams. This causes localized flooding, river bank erosion, and damage to physical infrastructure such as roads, bridges, water supply systems, houses, and schools. When the floods are exceptional, as this year, such natural disasters cause widespread physical damage, as well as hardship to the population of districts that belong to the poorest in Georgia. Responsibility for maintenance of river banks is not formally defined, but it rests with several agencies, including DASM, Department of Roads, and Local Government.

2. Objectives

The objective for the proposed reconstruction of flood-damaged infrastructure component would be to improve and secure the sustainability of river flood protection works and irrigation headworks and canals, which, if unattended, could lead to increased flooding occurrences and infrastructure damage, and subsequent human life and economic losses.

3. Rationale for Bank Involvement

IDA agreed to provide additional financing in the amount of US $5 million to address the most urgent needs in repairing damage to physical structures related to irrigation and flood protection. IDA would use its considerable experience with flood emergency projects and introduction of appropriate designs and construction materials to reconstruct sustainable infrastructure that would require minimum maintenance.

4. Description

The Additional Financing of US $5 million would enable strengthening of river embankments at critical locations along major rivers (including Rioni, Tskhenistkali, and tributaries of the Alazani). It is not excluded that some funding would be provided to also carry out river bank protection along some of the mountainous rivers as well, in case this is identified by government
as a priority after compiling the final flood damage information at the end of the flood season in July. The component would also rehabilitate several flood-damaged irrigation headworks and canals as well. If reconstruction of embankments is not carried out before the 2006 flood season, large areas would be flooded during the peak of the flood season. Other embankments have been severely damaged by the floods and would almost certainly be fully destroyed during the next flood season unless they are urgently repaired. Therefore the most critical sections of priority river embankments would have to be reconstructed before the spring of 2006, for which financing is urgently required, while other embankments would be strengthened during the next nine months in order to withstand the 2006 floods and then be completed to full design standards after the 2006 floods. Several irrigation structures are currently unable to abstract and convey the required water to the irrigation areas. DASM is putting some temporary, seasonal repairs in place to allow at least some abstraction during the 2005 irrigation season, but urgent and full rehabilitation would have to be carried out after the irrigation season, to be financed from the Additional Financing.

A list of priority sub-projects has been identified, but there would be certain flexibility during project implementation in case sub-projects are identified after the flood season that have clear flood-related damage and the reconstruction of which would have higher impact than other sub-projects on the priority list. The works to be carried out should provide complete protection for a certain area and should be well constructed in order to be durable and provide a long-term protection to rural people and public and private infrastructure or, in the case of irrigation systems, be able to provide the needed irrigation water to farmers. The proposed component would introduce innovative and cost effective design and construction measures. The new component would allow government, partners such as the UN Disaster Management Team, and IDA utilizing its world-wide experiences, to discuss opportunities to put in place better institutional arrangements for the management and upkeep of river bank protection systems.

Project staff would consult with communities and local administrations to describe planned works. Contractors are expected to provide significant short-term employment to local people, which is of benefit in areas of high unemployment.

5. Financing

<table>
<thead>
<tr>
<th>Source</th>
<th>($m.)</th>
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<tr>
<td>BORROWER/RECIPIENT</td>
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<tr>
<td>INTERNATIONAL DEVELOPMENT ASSOCIATION</td>
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<td>IDA GRANT FOR NATURAL DISASTERS</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>6.2</strong></td>
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6. Implementation

There is a need for urgency with the implementation of the newly proposed component, as it has to be guaranteed that a reasonable amount of the reconstruction works are fully completed before the 2006 spring floods, and the remainder before the 2007 spring floods. The Project Technical Unit (PTU) of the ongoing IDCDP, which has performed satisfactory so far, would be responsible for the implementation of the additional component, in close cooperation with DASM and other agencies, as needed, such as Local Governments.
The PTU is staffed with national experts, recruited on competitive basis. It has adequate procurement and disbursement staff and systems in place that would be able to cover the additional component as well. A team of engineers in the PTU would be responsible for the overall technical management of the component and the supervision of design and construction supervision engineering firms.

7. Sustainability

Senior management of the Ministry of Agriculture (MOA) and DASM are highly committed to the proposed activities and has participated fully during project preparation and appraisal. Through the implementation of the IDCDP, many staff of DASM at national and regional level have gained experience in the implementation of investment projects. Also, DAMS is well-staffed with engineers and inspectors who are trained to carry out maintenance and monitoring of embankments under their responsibility.

The embankments constructed under this Additional Financing are expected to be durable. The good quality and placing of the rock would ensure a long operational life, provided that prompt maintenance is carried out, where needed. Experience with Reno mattresses around the world shows that this kind of river bank protection can last for several decades without major damage. As needed, a row of relatively large stones would be placed at the bottom of the protected slope in order to mitigate the effects of abrasion by the solid transported materials.

The project would introduce innovative and low cost engineering solutions that are durable with little maintenance. During implementation, the project would include a Community Monitoring Program that would aim at engaging local residents in the regular checking of structures, e.g., checking the conditions of Reno mattresses at regular intervals to capture damage early on. This would enable provision of prompt maintenance to be carried out by the DASM or the local governments where needed, which in the long term would save higher costs and provide longer services of embankments and levees.

The expected outcomes for the additional component would be: (i) to return flood-damaged irrigation infrastructure to operational conditions thereby guaranteeing water abstraction and conveyance; and (ii) to return flood-damaged river bank embankments to fully operational conditions.

8. Lessons Learned from Past Operations in the Country/Sector

Experience has shown that sound engineering design, good resource planning, and effective management for implementation typically produces good results, enhancing not only the nation’s long-term infrastructural assets, but also its stock of engineering and contracting expertise. Also, timely project implementation depends on good project planning. In this case, the sequence of construction works should also be carefully planned by the PTU and contractors so that, when floods occur, most works are in a state capable of withstanding them.
Simple technologies and design approaches which are new for the borrowing country can be successfully introduced and adopted by relatively inexperienced contractors if the necessary support of international experts, along with effective local support, is provided.

Import of working quantities of new products can demonstrate the effectiveness of new technologies and provide the key to their acceptable on a wider scale, as well as a guide and comparative gauge for local manufacture.

Training (especially on-the-job) is critical in order to obtain overall satisfactory results and to provide a relatively homogeneous quality level throughout similar activities.

9. Safeguard Policies (including public consultation)

<table>
<thead>
<tr>
<th>Safeguard Policies Triggered by the Project</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Environmental Assessment (OP/BP/GP 4.01)</td>
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<td>Natural Habitats (OP/BP 4.04)</td>
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<td>Pest Management (OP 4.09)</td>
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<td>Cultural Property (OPN 11.03, being revised as OP 4.11)</td>
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<td>Involuntary Resettlement (OP/BP 4.12)</td>
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<td>Safety of Dams (OP/BP 4.37)</td>
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<td>Projects in Disputed Areas (OP/BP/GP 7.60)</td>
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<tr>
<td>Projects on International Waterways (OP/BP/GP 7.50)</td>
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</table>

The additional component would finance repair and reconstruction of destroyed and damaged infrastructure. No new structures are envisaged. The component would not include any investments in dams or involve resettlement. The proposed component has been classified as Category "B" for the purposes of OP 4.01, similar to the original project. During the design stage of each sub-project all possible environmental factors would be reviewed. Necessary mitigating measures would be an integral part of design and implementation. From visits to the potential sub-projects, it is expected that typically minor potential negative impacts of the component would relate to: (i) disposal of excavated sediments and construction materials; and (ii) possible environmental damage caused by contractors during construction activities. Sediments and other debris would be displaced in an orderly manner, rather than dumped indiscriminately. Contractors would be required to prevent, minimize, or mitigate environmental damage. This would be described in the tender documents, for which there are established practices under the ongoing project. The PTU employs an environmental specialist who would also be made responsible to oversee the additional component with regard to environmental aspects and ensure that the proposed works will cause no damage to the environment.

In accordance with the Bank’s policy on International Waterways (OP 7.50) notification of riparian countries is not required. Most of the sub-projects are located in the catchment area of western Georgia that drains into the Black Sea. The proposed works would not adversely change

*By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties’ claims on the disputed areas*
the quality or quantity of water flows, and would not change the nature of the original sub-
projects or alter or expand the scope and extent as to create a new or different scheme. In
addition, works for river bank protection are concerned with flood protection, not flood control.

10. List of Factual Technical Documents

IDCDP documents:
- Project Appraisal Document (May 25, 2001; Report No.: 22402-GE)
- Environmental Impact Assessment - Joint Environmental Program: World Bank
  Irrigation and Drainage Community Development Project, Georgia (JEP-03), February
  2001
- Development Credit Agreement (May 2001)
- IDA Supervision Reports, including Aide Memoires and PSRs, for every supervision
  mission under IDCDP
- Accion Contra El Hambre: Rapid Emergency Needs Assessment – Agricultural damage
  and needs Caused by the floods in upper and lower Svanetia and Racha/Lechkhumi,
  Georgia (Tbilisi, May 2005)
- World Food Program: Emergency Needs Assessment in Racha –Lechkhumi and Adjara
  Regions (April 30-May 1, 2005)
- UMCOR: Health Needs Assessment (Georgia, May 2005)
- FACT Activity Reports 1-8, May 2005

11. Contact point

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