

SRI LANKA

Kirindi Oya Irrigation and Settlement Project

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The Kirindi Oya Irrigation and Settlement Project was intended to develop underutilized land in the dry zone of Sri Lanka. Its main objectives were to increase food and fiber crop production and create gainful livelihood for people barely covering their subsistence needs. The Project included the construction of the country's largest earth-fill dam with a gated spillway and canals to irrigate 8,400 hectares (ha) of newly developed command area. Additional water

would allow cropping intensity to increase from about 135 to 200 percent on an existing area of about 4,600 ha irrigated from traditional reservoirs (tanks). With reliable irrigation, yields were expected to increase considerably.

The 1977 feasibility study assembled the considerable preparatory work undertaken by the Government, supported by limited technical assistance from the Asian Development Bank (ADB). From the options considered by the Government over time, the one



proposed under the feasibility study was driven by political expediency. It was the best prepared option and the Government wished to demonstrate its concern for people's welfare in an economically depressed area that had recently experienced civil disturbance. The feasibility study terms of reference restricted analysis to the Government's specific request.

In December 1977, the original loan was approved by ADB, with a supplementary loan approved in December 1982 and an additional loan, referred to as Phase II, in October 1986. The scope of the Project, which closely followed the design requested by the Government and defined in the feasibility study, remained essentially unchanged over three appraisals. There was the deferment of some of the irrigation implementation to a second phase and the addition of small components for rural credit, social forestry, livestock, and marketing. Inclusion of cotton and other subsidiary field crops was intended to support the national policy of promoting crop diversification and limit irrigation water demand on the large areas of permeable soils to be developed under the Project. However, other projects experienced problems in establishing cotton and so plans for the crop were dropped under the supplementary loan. Reformulation during implementation in 1991 reduced the development of new irrigation by about 3,000 ha due to limited irrigation water availability and irrigation management problems. At completion in 1994, the area of new irrigation totaled 5,400 ha, about 64 percent of the appraised target.

The implementation period was more than double the 7.7 years originally envisaged, due to (i) delays in the commencement of major civil works, (ii) the effort required to obtain the additional funding needed to complete the project, and (iii) insufficient contractor capacity due to the demands of the large civil works program under the Accelerated Mahaweli Development Program. Political disturbances also disrupted work progress occasionally. Institutional constraints were increasingly noted and compensated for by provision of additional consultants.



After a difficult period in the late 1980s and early 1990s, the irrigation scheme is performing better. Yields have averaged almost 4 tons/ha despite a number of dry years such as 1999. Cropping intensity has varied between 114 percent and 200 percent over the past 10 years, with an average of 171 percent since 1992 compared with the design target of 189 percent. Farmers have focused on rice production with less development of

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other field crops than envisaged, though banana areas are expanding. Annual crops are grown on a reasonable scale in drier years, though often without irrigation.

A total of 4,924 families were settled under the Project. These included 1,450 families displaced by the dam and irrigation development with the balance selected from other areas of southern Sri Lanka. Appropriate settlement infrastructure, including safe drinking water, was provided. For many farmers resident in the new irrigation area, family income remains low with a survey conducted for the Government's project completion report indicating an average income of \$135 per capita in 1994, just below the \$140/capita poverty line (in 1991 prices). However, in absolute terms their income has improved somewhat, particularly in the new irrigation areas. Malnutrition continues to be a severe problem in the project area, particularly for mothers and children.

The environmental record is mixed with some significant disbenefits, notably a reduction in salinity of the ecologically valuable coastal lagoons. However, the human environment within the command area is now aesthetically attractive compared to adjoining slash and burn agricultural areas, while malaria incidence is reported to have fallen significantly.

Project economic performance has been poor due to (i) implementation delays; (ii) high project cost; (iii) below target development of new land; and (iv) reduced cropping intensity, particularly on the new areas due to limited water availability. Both the livestock and forestry components, added in Phase II, performed poorly compared to target. The EIRR is estimated at 2.6 percent.

While irrigation infrastructure is mainly being maintained by the Irrigation Department, water user groups will need to take more responsibility for scheme operation and maintenance. However, the main threat to sustainability comes from irrigation, agriculture, and human settlement development in the catchment above the dam.

With the notable exception of the settlement component, the Project overall has performed below expectation, although it remains relevant to Sri Lanka's development objectives. However, its relevance is reduced somewhat by the high cost and relatively small number of beneficiaries. Cost-effectiveness and implementation efficiency were low. The Project suffered from institutional problems and had little impact on institutional development. Although the Implementing Agency's accounting systems improved, project monitoring remains inadequate. Overall, the Project is rated partly successful.

Aspects requiring particular attention in the future include (i) the threat to project sustainability due to upper catchment degradation and increasing use of water for irrigation upstream of the dam, which are reducing reservoir recharge and irrigation water availability; (ii) irrigation management, with improvements in this regard likely to have positive impacts on income, nutrition, and the environment (requiring significant sociocultural change on the part of the irrigation administration as well as the farmers); and (iii) settlement, with a need to allocate land titles to resident farmers and address nutritional problems in the project area and wider region.