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PERFORMANCE AUDIT REPORT

ARGENTINA

**FLOOD REHABILITATION PROJECT
(LOAN 3521-AR)**

June 16, 2000

Operations Evaluation Department

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Currency Equivalents (annual averages)

Currency Unit = Country Currency: *Peso (Arg\$)*

Abbreviations and Acronyms

ICR	Implementation Completion Report
OED	Operations Evaluation Department
PAR	Performance Audit Report
SAFP	<i>Secretaría de Asistencia Financiera a las Provincias</i> Secretariat for Financial Assistance to the Provinces
SUCCE	<i>Sub-Unidad Central de Coordinación para la Emergencia</i> Central Subunit for Emergency Coordination
SUPCE	<i>Sub-Unidad Provincial de Coordinación para la Emergencia</i> Provincial Subunit for Emergency Coordination
UEC	<i>Unidad Ejecutiva Central</i> Central Executing Unit
UEP	<i>Unidad Ejecutiva Provincial</i> Provincial Executing Unit

Fiscal Year

Government: January 1 – December 31

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June 16, 2000

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

**SUBJECT: Performance Audit Report on Argentina
Flood Rehabilitation Project (Loan 3521-AR)**

The Argentina Flood Rehabilitation Project (Emergency Recovery Loan 3521-0, 3521-S, and 3521-A, approved on September 29, 1992, for US\$170.0 million) was a response to the second-largest flood to affect Argentina in the last century. The loan closed on March 31, 1998, five and half years after Board approval and three years beyond the original closing date of March 31, 1995. Final disbursement took place on July 22, 1998 (under converted Loan 3521A-AR, US\$2.8 million was canceled on July 31, 1998).

The loan supported a national emergency response program and the development of a national strategy to help Argentina cope more effectively with the recurrent floods to which it is vulnerable. The project had two objectives: to finance flood reconstruction needs in the seven afflicted provinces, and to provide an institutional framework for coordination and implementation of government rehabilitation efforts. The components included *inter alia* rehabilitation of highways, streets, railroads, ports, and electricity distribution equipment; repair of flood control works and replacement of pumping equipment (for removing floodwaters from low-lying urban areas); construction of new housing for families permanently relocated out of the floodplain; rehabilitation of public buildings; reconstruction of water and sewerage systems, technical assistance for institutions involved in project implementation; and a series of studies.

The Flood Rehabilitation project rapidly rehabilitated critical economic infrastructure. The project completely altered the practice of flood control in Argentina, reduced the need for costly emergency relief (flood control improvements withstood the 1997/98 El Niño) and temporarily provided an effective institutional framework for disaster response. An area comparable in size and complexity to the Mississippi and its principal tributaries received careful study and highest priority protective works for the first time. Thousands of new housing units were built using the self-help construction methodology. While in many respects the project is a model for future efforts, certain aspects of the project should not be duplicated uncritically, and others not at all. Bank-wide experience has shown that reconstruction of damaged infrastructure alone is imperative but insufficient, and that while a quick response to natural disaster is important, it is equally important to identify local vulnerabilities and determine how to reduce them in ways that lead to durable solutions. Project experience in several recently evaluated projects suggests that the amount of time allotted to permanently reducing vulnerability under the Operational Directive for Emergency Recovery Lending is short of what is actually required to do the job.

OED rates project outcome as satisfactory, sustainability as likely, and institutional development impact as modest. This differs from the ICR only in the institutional development rating—the ICR rated institutional development as substantial. While the project actually

achieved its institutional development objective, that objective was inadequate and short-sighted. In the view of the audit, highly significant institutional development impact took place (and the national coordinating unit carried out its responsibilities in a highly satisfactory manner) but only because extremely skilled consultants staffed every key position. Creating a temporary disaster management agency without permanent staff or institutional memory is somewhat pointless in a country that experiences severe flooding every other year: future Bank support for increasing disaster management capacity should focus on finding an institutional solution that will maintain disaster-experienced staff in key positions indefinitely. Infrastructure cost overruns and design shortcomings, the failure to create a sustainable disaster-specialized institution and unintended environmental impacts prevented the project from receiving a higher outcome rating. Lessons learned identified by the audit include the importance of avoiding resettlement fundamentalism in an urban post-disaster context, the identification of successful and unsuccessful practices in post-disaster housing reconstruction, and the need to discourage the reoccupation of dangerous areas by human settlements.

Attachment

A handwritten signature in black ink, consisting of a large, sweeping oval shape on the left and a series of vertical and diagonal strokes on the right, resembling a stylized 'A' or 'J'.

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<p>This report was prepared by Ronald Parker. William Hurlbut edited the report. Helen Phillip provided administrative support.</p>

Principal Ratings

	<i>ICR</i>	<i>ICR review</i>	<i>Audit</i>
Outcome	Satisfactory	Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development	Substantial	Substantial	Modest
Borrower Performance	Satisfactory	Satisfactory	Satisfactory
Bank Performance	Satisfactory	Satisfactory	Satisfactory

Key Staff Responsible

	<i>Task Manager</i>	<i>Manager</i>	<i>Country Director</i>
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Preface

This is a Performance Audit Report (PAR) on the Argentina Flood Rehabilitation Project (Loan 3521-0, 3521-S, and 3521-A, approved on September 29, 1992, for US\$170.0 million). The loan was closed on March 31, 1998, five and half years after Board approval and three years beyond the original closing date of March 31, 1995. The final project cost was US\$258.8 million (appraisal estimate US\$270.0 million). Final disbursement took place on July 22, 1998, under converted Loan 3521A-AR, leaving a balance of US\$2.8 million in the loan account, which was canceled on July 31, 1998.

This Operations Evaluation Department (OED) report is based on the President's Report, sector reports, special studies, Policy Framework papers, loan documents, review of the project files, and discussions with Bank staff. An Implementation Completion Report (ICR, Report No. 18769, dated January 4, 1999) was prepared by the Argentina, Chile and Uruguay Country Management Unit, Latin America and Caribbean Region. An OED mission visited Argentina in November 1999 and discussed the effectiveness of the Bank's assistance with government officials, development organizations, beneficiaries, and other stakeholders. Their kind cooperation and invaluable assistance in the preparation of this report are gratefully acknowledged. A participatory self-evaluation exercise was held with the entire SUCCE staff in Buenos Aires on November 15, 1999.

The ICR provides an account of the project experience and covers project design, the role of the Bank, and achievements. This project was selected for an audit because the impacts of project-initiated activities, and the lessons learned during implementation and following loan closing were expected to have broad applicability to other emergency lending projects. The PAR focuses on post-disaster housing reconstruction, preservation of cultural heritage, and progress in reducing the long-term vulnerability of Argentina's coastal provinces to periodic flooding. It assesses the quality of the intervention design, including its consistency with the problems identified, and it reflects upon the broader implications of the project experience for Bank disaster policy. It considers the effectiveness of the Bank and borrower dialogue; reflects on the borrower's ownership, consensus, and commitment; and determines the effectiveness of the project subcomponents.

Copies of the draft PAR was sent to the relevant government officials and agencies concerned for their review and comments. No comments were received.

1. Introduction

Country Context

1.1 Argentina's most distinctive geographic feature is the delta formed by the conjunction of three great rivers: the Paraguay, Paraná, and Uruguay. The Paraguay River runs for about 2,500 km from its origins in southwestern Brazil until joining the Paraná. The Uruguay River, also originating in Brazil, flows almost parallel to the Paraná until joining it in a 100 mile-long estuary in the northern part of the country, just northeast of Buenos Aires. The waters of the combined Paraná and Uruguay, draining one fourth of the waters of South America from a watershed with an area of more than 4.1 million square kilometers, flow into the Plata River and then out to sea.

1.2 Heavy precipitation throughout the year and the country's flat topography often combine to inundate the floodplains of all four rivers. When widely dispersed heavy rains create high waters in several rivers at the same time, huge swathes of ground can be inundated. The Paraná floodplain and delta alone are about 60 kilometers wide. Dangerous conditions occur alarmingly often—the hydrological data for the city of Corrientes show flooding in two of every three years, for example.

1.3 Towards the end of 1991, torrential rains began falling over a wide area, causing the second-largest flood to affect Argentina in a century.¹ Meteorologists attributed the unusual wet weather to the El Niño phenomenon. Early in 1992, as local teams worked feverishly, stacking sandbags and building temporary barriers, the floodwaters rose steadily. By the time the rains peaked in April and May 1992, the accumulated precipitation was already about four times the *yearly* average. High water overflowing riverbanks and bursting through earthworks seriously damaged inland infrastructure, and forced the evacuation of about 120,000 people from seven provinces.² Economic losses were estimated at more than US\$900 million. Commerce was nearly paralyzed, and many industries were slow to return to production. Low-income families living deep in the floodplain, many of them squatters, suffered severely, losing homes, belongings, foodstuffs, and livelihoods. Relief and rescue operations concentrated on evacuating the affected population and providing them with shelter, blankets, and food. Places where evacuees were housed also suffered damage from prolonged intensive use.

The Role of the Bank

1.4 To cope with the disaster, the central government established a national emergency program, and requested the Bank to begin preparing an Emergency Recovery Loan. The disaster came at a critical moment: Argentina was in the process of consolidating a long-awaited economic recovery following a difficult period of adjustment. To Bank staff preparing the project it seemed likely that the flood experience would induce the government to develop a national prevention strategy that would help vulnerable cities and provinces to cope more effectively with the recurrent floods to which they were subject, and help to reduce the need for costly disaster relief.

1.5 The three-year implementation period mandated for emergency recovery operations by Operational Directive 8.50³ meant that in order to achieve a fully comprehensive reduction in disaster vulnerability—given that the flood disaster was ongoing—Bank staff were obliged to relegate some

1. Disasters are becoming more frequent and severe: the 1997-98 El Niño caused even worse flooding.

2. Buenos Aires, Chaco, Corrientes, Entre Rios, Formosa, Misiones, and Santa Fe—these provinces together account for nearly half of national GDP.

3. Operational Directive 8.50 is now superseded by OP 8.50.

important flood mitigation efforts to a follow-on project. This could have postponed mitigation indefinitely. As disasters disappear from the front page and the evening news, government priorities often change radically. The issue of improving the Bank's approach to the design of post-disaster lending will be addressed further below. Fortunately, two additional flood-related loans were approved to continue the work of the Flood Rehabilitation Project: the Flood Protection Project (Loan 4117-AR for US\$420 million in FY 98) and the El Niño Emergency Flood Project (Loan 4273-AR for US\$60 million also in FY 98). The Flood Protection Project, the immediate follow-on loan to the Rehabilitation Project, was designed to protect economically important locations throughout the Paraná basin. The El Niño Emergency Flood Project operation was intended to ameliorate the impact of heavy rains and flash floods over a broader geographic area.

The Project

1.6 By rapidly reconstructing destroyed infrastructure, the loan for the Flood Rehabilitation Project was expected to restore conditions conducive to long-term growth in the provinces. And, by alleviating the burden on other sources of finance, the project would reinforce the government's macroeconomic program, and allow the government (the borrower was the Argentine Republic) to finance the recovery effort without recourse to an inflationary tax. The project had two objectives:

- To help finance flood reconstruction needs in the seven afflicted provinces
- To provide a sound institutional framework for coordination and implementation of the overall government rehabilitation program.

The components were multisectoral and can be classed as follows:

- Transport and energy: rehabilitation of inter-city roads, urban streets, railroads, ports, and electricity distribution; replacement of destroyed electrical equipment; and repair of roadside flood defenses.
- Emergency flood control works: strengthening of embankments that were either seriously eroded or washed out; replacement of damaged dikes; repair or replacement of provisional flood control structures used to temporarily protect residential areas; and repair and replacement of pumping equipment (for removing floodwaters from low-lying urban areas).
- Repair of private housing, construction of new housing for families permanently relocated out of the floodplain, and rehabilitation of public buildings.
- Reconstruction of water and sewerage systems (including water intakes; water treatment plants; water pumping stations; a water distribution system for two cities; water wells, sewage pumping stations; sewage interceptors and collectors for eight cities; and a sewage oxidation pond).
- Technical assistance for institutions involved in project implementation (engineering design, feasibility studies, and construction supervision).
- Disaster prevention and mitigation measures: an evaluation of existing flood "early warning" measures, development of a more comprehensive flood forecasting system, support for improved management of river basin resources, and a series of studies.

Institutional Framework

1.7 Argentine provinces have primary jurisdiction over water resources, but vulnerability reduction had not been a high priority. Before the disaster, floodplain management was haphazard, characterized by gaps and overlaps due to inadequate infrastructure, inappropriate regulations, and weak institutional capacity. Within most provincial administrations, critical tasks frequently involve coordination with agencies from more than one ministry—which complicates emergency management.

1.8 To implement this emergency project expeditiously, it was decided to base the project on the existing organizational framework elaborated under the Provincial Development Project (Loan 3280-AR, approved in FY1992), making minor modifications as necessary. A Central Executing Unit (UEC) (located in the Ministry of Interior's Secretariat for Financial Assistance to the Provinces [SAFP]) was in charge of implementing the project. There were also Provincial Executing Units (UEPs), which implemented local activities. Special committees were created to deal with the emergency situation generally.⁴ The role and functioning of the special committees are reviewed in detail in the ICR. While nominally subordinate to the permanent structures, emergency structures were nevertheless autonomous. An unusual feature of the project was the creation of the full-time general supervisor position. This individual was responsible for monitoring the project independently and reporting to the SAFP and the Bank. At the national level, the Secretariat of Natural Resources and Sustainable Development (in the Office of the President) was responsible for water policy.

2. Implementation and Results

2.1 Approximately 25 percent of the works completed had not been identified during appraisal because the rains continued to fall and the damage kept increasing: high waters even kept staff from adequately identifying activities in Buenos Aires province, close to the capital. As a result, the same percentage of the project's base cost had been assigned to contingencies (25 percent). A project manual provided guidance and established the minimum standards for all aspects of implementation, and each proposed subproject had to be justified and documented as it outlined.

2.2 The loan closed three years later than planned, and the total project cost was US\$258.8 million (appraisal estimate US\$270.0 million). The savings realized were mostly due to actual bids being lower than appraisal estimates. The Board approved the loan on September 29, 1992, the loan was signed on January 7, 1993, but it was only made effective on March 23, 1993 (six months after its Board date).⁵ Seventeen contracts covering emergency repairs in transport, energy, education, health and flood defense structures in five provinces (US\$18.4 million) were retroactively financed. Unallocated funds were used to address additional flood control and transport and energy rehabilitation works.

ICR Findings

2.3 The ICR noted that disbursements did not reach the anticipated levels because appraisal estimates (made under the difficult circumstances described above) were unrealistic. Early project activities were largely emergency in nature and, because the intended implementation period was short, works that could be accomplished quickly were given preference. The project experienced major delays, however. Actual works contracts on average lasted nine months—three times longer than expected—and the loan closing had to be extended four times. The ICR attributed project delays to five causes: excessively bureaucratic (yet technically deficient) reviews of sub-projects; time-consuming revisions of detailed engineering plans; delayed availability of counterpart funds (provincial and federal); contractors' inexperience; and construction delays due to engineering complications (unanticipated design inadequacies were discovered after construction had already commenced).⁶

4. There were centralized units (*Sub-Unidad Central de Coordinación para la Emergencia*, SUCCE) as well as provincial committees (*Sub-Unidad Provincial de Coordinación para la Emergencia*, SUPCE). SUCCE was headed by a chief executive, each SUPCE also had a chief executive; both had a full complement of personnel.

5. Loan effectiveness required three provinces to sign subsidiary loan agreements.

6. In two sub-projects, Laguna Blanca and Avenida Costanera, there were delays of over 18 months.

2.4 The appraisal team pushed itself to put the emergency project together in three months—the ICR notes that the project’s slow start-up wasted that intensive effort. It characterized procurement as entirely transparent and flexible:

- No major discrepancies were noted during bidding or contracting processes
- Simplified bidding documents were effectively used
- The limited prior Bank review of bidding documents (requested by the borrower to keep up project momentum) proved sufficient.⁷

2.5 The ICR concluded that despite the problems, all physical objectives were fully met and, in some cases, surpassed. Another important ICR finding was that the project had substantially lowered the risk of economic disruption due to flooding. The ICR predicted that the project investments in infrastructure and institutions had established a solid foundation for the follow-on Flood Protection Project.

PAR Findings

2.6 The audit supports the ICR findings in all important particulars and finds it to be an accurate portrayal of a project experience that significantly changed local emergency response patterns in a number of important ways. The project completely altered the practice of flood control in Argentina, and reduced the need for costly emergency relief. It also experimented with innovative ways to reduce social marginality. This report reviews the development of improved flood control infrastructure, evaluates a highly participatory approach to the reconstruction of flood-damaged housing, identifies additional lessons applicable to post-disaster cultural heritage preservation and to other emergency response projects within the region and beyond.

The First Comprehensive Protection Effort

2.7 The area subject to flooding is home to some 10.0 million people.⁸ In the past, makeshift protective earthworks had been built without a well-thought-out plan or (often) a basic understanding of the local topography. Thus, settlements commonly protected themselves by building a levee along the river, but they then did nothing to protect themselves from a nearby creek that fed into it—rising water in the river raised the level of creek, and floodwaters came in to the settled area from an unanticipated direction. Under the project, locales too difficult or costly to protect, and where human settlements were to be avoided were delimited, as were zones where evacuation would be necessary in extreme events. But protected areas received full and technically adequate coverage for the first time. The downside was that, given the flat terrain in some areas, drainage of rainwater from large storms became problematic after the levees were built.⁹ The same structure that kept out the river made storm drainage a problem: the rainwater had no way to escape. In many urban areas the solution was to provide high-capacity pumps and/or flood gates (but the problem with the latter is that they would only work when the area outside the levee was not flooded).

2.8 The scale of the challenge is immense. The floodplain, including its river basin, covers more than a third of Argentina, including the nation’s most developed agricultural and industrial zones, an extensive transportation network, and two major hydroelectric dams. The project area covered 1.5 million square kilometers. Thus, an area comparable in size and complexity to the Mississippi and its principal tributaries (the Missouri, Illinois, Arkansas, Ohio, Tennessee, and Red Rivers) received

7. Because SUCCE and the SUPCEs had rapidly developed a strong capacity for procurement.

8. The project area contains about 79 percent of the nation’s inhabitants.

9. It was problematic in some of those areas before the project, but the construction of levees certainly made it more so.

careful study and highest priority protective works for the first time. Relevant Bank experience has shown that an integrated river-basin approach helps countries to deal effectively with flood control over a broad area.¹⁰

2.9 The approach taken by the Flood Rehabilitation project was modest and measured: rather than trying to protect most of the flood-prone areas—an approach that ultimately proved unsuccessful for the Mississippi (floodwaters need a place to go, otherwise you just move the disaster downstream)—protected areas were reduced as much as possible during this first attempt. Also, because of the huge expense involved, protections were built to be effective against more likely events. Further work and investment will be required to protect against the 500-year flood, for example.

Flood Control Measures Can Create New Problems Needing Their Own Solutions

The city of Resistencia is located on the Paraná and surrounded by the Rio Negro and Rio Salado. Under normal conditions, the Rio Negro runs along the city's edge to empty into the Paraná. As the city built a comprehensive system of flood defenses focused on the Paraná, its levees created a dam that would trap the waters of the Rio Negro once floodgates were shut. So the city, so expensively protected from the major river, was put at risk of inundation from a much smaller river following intensive rains. The Laguna Blanca dam blocked the Rio Negro and channeled it into a bypass canal that took its waters to the Rio Salado, from which they could drain without flooding the city.

2.10 The least successful aspect of the project was the construction of the river divergence control structure in Laguna Blanca (in the province of Chaco near the city of Resistencia), which turned into a sort of Leaning Tower of Pisa.¹¹ Not only did it take longer than estimated to construct, it was beset by immense engineering complications. Inadequate site review (especially of the subsoil) led to inadequate site selection. Construction of the check dam had to be stopped in order to compensate for its excessive lean due to subsidence. To stabilize the concrete structure and restore it to the vertical, hundreds of concrete pillars had to be inserted underneath it by high pressure—a costly fix. While building a new structure in another site might have been the preferred solution, it was not an option in Laguna Blanca because, by the time the extent of the problems became apparent, the diversion canal was already finished, and the sizeable investment in the canal (including access roads and bridges over it) would have had to be written off had the dam site been changed. A panel of internationally known engineers was recruited to review the repairs to the unfinished structure (an expense that was justified because Resistencia lay downstream, and the results of flooding caused by functional failure would be highly catastrophic). The ICR adequately reviews the experience with the panel and concludes that closer screening of the engineering plans' site selection was required, and that the dam should have been designed with a longer implementation period.

2.11 The Laguna Blanca structure has been subject to an ongoing monitoring process (to measure its inclination, subsidence, the amount of water flowing under it through subterranean channels, and dam operation during flood conditions). As of November 1999, responsible staff in the office at the dam site affirmed that it had remained stable since the repairs and was functioning as designed. In addition, the divergence canal was inspected. Because of soil peculiarities, of all the earthworks visited during the audit mission,¹² those of canal were the most deteriorated. Project staff mentioned (and it could be confirmed by observation) that the bypass canal, which takes the water from the

10. This issue is addressed in the Performance Audit Report of Poland Environmental Management Project (Loan 3190-POL)

11. The Avenida Costanera subproject was also beset by major delays and engineering complications.

12 Which includes most of the key elements of the flood control infrastructure in the provinces of Formosa, Chaco, and Santa Fe, as well as less important works in Buenos Aires province.

Negro River to the Salado River, is having a significant unintended environmental impact. Vegetation and fish from the former and never found in the latter are now in both, and certain undesirable vegetation—a large floating bulbous species—seems to be taking over, although it is beyond the scope of this review to evaluate the consequences.

2.12 Finding responsible institutions to take charge of periodic maintenance is an unresolved issue. During the audit visits to dikes, levees, and other flood control structures in the lowland provinces of Chaco, Formosa, and Santa Fe it became quite apparent that, although much is being done, far more work is required. One way maintenance has been assured has been to maximize the recreation potential of the infrastructure. In the city of Santo Tome, a sandy beach was made outside the levee where the river is good for swimming. Thatched beach umbrellas create shade for those who have had enough sun, small businesses selling drinks and snacks have opened, and permanent benches, tables, and barbecue stoves were installed for general use. In several cities, the levees have been set up to facilitate jogging. Vehicular traffic is prohibited, and street lighting makes the paths accessible to runners in the evening when the temperature drops and people are home from work. All of these measures create a constituency for maintenance, at least in those areas most suited for recreation.

2.13 A related challenge is that appropriate technological solutions for the proper maintenance of problematic earthworks have not yet been identified. In some instances, planting an adequate vegetative cover should be sufficient. In many others, however, only a re-sculpting of the earthworks will combat erosion and slumping. Many of the levees are too steep to stabilize adequately, and only broadening the base and reducing the slope will solve the problem. Project staff assured the audit mission that Dutch experts were working with them on soil stabilization, and that activities to re-shape critical earthworks have been included in the follow-on project. Another issue that came up repeatedly was that both newly protected and unprotected areas (where squatters have been expensively removed) require an immediate land-use plan to prevent reoccupation. In a large newly protected area near Santa Fe (financed by another donor) a huge squatter area sprang up along the highway in a matter of weeks because no thought had been given to the immediate regulation of land use. Among the uses that almost always ensure proper long-term utilization of flood-prone areas are parking lots, soccer fields, bike paths, and parks. In some towns, project beneficiaries resettled out of an area are given the use of the land they formerly occupied as community gardens; the thought is that they will help defend these sites from encroachment if they have an economic incentive to keep them unoccupied. The results of this experiment are not yet clear.

Self-help Housing

2.14 The families living in the floodplains around the major cities and many small towns suffered hardships during the flood and often found themselves still living outside the areas protected by the project-built levees following the rehabilitation effort. By and large, they were squatters, occupying low-quality housing built on public lands or property belonging to absentee landlords. Many were fishermen, although some just took advantage of unoccupied and unprotected land located close to city centers and employment. Thousands of these low-income families were able to obtain new homes and (usually) safe land inside the protected areas through the project. They generally participated in the construction of their own new housing units (interior area between 30 m² and 45 m²) with two bedrooms and a kitchen/dining room. The appraisal report¹³ stipulated that the houses were to be prefabricated and made out of wood, but early efforts with this style/material mix proved to be unpopular with the beneficiaries and local government.

13. Paragraph 7 section c.

2.15 The Bank task manager was originally opposed to using a self-help approach because few Bank projects have completed the number of houses estimated during appraisal in that manner. Bank staff lobbied strongly for the use of pre-fabricated structures and contractors so that project estimates would be achieved. Reportedly, the component came very close to being abandoned because consensus was so elusive. Local staff, however, were intent on using traditional materials and active beneficiary participation, and they prevailed: the task manager ultimately agreed that in most communities homes would be constructed out of brick. Since the homes were to be built by the beneficiaries, and most families had little or no construction experience, this decision unleashed an educational challenge of herculean proportions—the mix of skills that each participant needed to learn in order to participate (that is, construct a home from scratch) was complex. Ultimately, 11,640 people received construction-related training.

2.16 Start-up was difficult, squatters were skeptical about project promises, believing that they would be forcibly evicted, their homes in the floodplain would be torn down, and they would receive nothing. Even after they agreed to work, many families dropped out because the tasks were physically challenging, there was a lack of tools,¹⁴ progress was slow (having supervisory staff assigned to tasks not related to housing slowed the process substantially), and many families found it difficult to forgo the income that could be earned by the member(s) working on the new home. The dedication of project staff to the subcomponent and the self-help approach was complete. They found (sometimes innovative) solutions to every problem, and they continued to create new incentives until the point was reached where the beneficiaries no longer quit.

2.17 In many respects the beneficiary families were indistinguishable from urban squatters that can be found in the slums and informal settlements clinging to hillsides and on the edge of watercourses surrounding all large Latin American cities. They just had the “good fortune” to be flood victims as well, who were able to produce witnesses attesting to the fact that they had lived in the flooded area for over a year (a prerequisite). Given that flooding can occur in Argentina’s littoral provinces two out of three years, the cost to the public purse of providing them with evacuation, social services, temporary housing and food until the flood waters receded was high—project staff assert that such costs over their lifetimes far exceed the value of the permanent housing and land they received under the project. This project’s experience—organizing marginal families to participate in a process that solved many of their social, employment, and health problems at the same time as it solved their housing problem and removed them from a vulnerable area—merits broader discussion and eventually duplication under similar circumstances.

2.18 Since there was no cash cost to participation in the sub-component, the incentive for poor families to participate was enormous. Materials for the new houses cost on average US\$3,980. Project documents value the urbanized land given to each family (titled to the family) between US\$300 and US\$2,000 (so it varied between 7 and 50 percent of structures’ cost), depending on local property values. Most participating municipalities provided construction supervision and social workers to facilitate community organization, adjustment to the new settlements, use of sanitary infrastructure (a novelty for many), environmental sanitation, and dispute mediation. All participating municipalities paid for street paving, sewerage, potable water systems, and electrical system installation costs. Additionally, the project staff had supervision and transport costs that averaged US\$270 per dwelling. So, all told, in many localities the cost of the home was in excess of US\$6,000—a housing solution the poor beneficiaries with an average household income of US\$156 a month would never have been able to provide for themselves. (Similar units sold to the public by a public housing agency cost between US\$15,000-20,000). To ensure that the beneficiaries would not cash in on what might appear to them to be a windfall, project rules required a signed contract stipulating that families occupy their units for a minimum of five years before selling (although some

14. The purchase of tools was not covered under the loan, which was an oversight.

jurisdictions doubled that figure). Not surprisingly, by all accounts (and the audit mission visited nearly 20 new communities in four provinces) there was no forced resettlement, no homes remained incomplete, and there were no instances of construction materials being sold commercially.

2.19 About 5,820 units were built in 100 different municipalities in six provinces. Although most families *participated* in the construction process, they did not actually build their own home entirely. In the first place, housing units usually were not assigned until all the homes were built (which created an incentive for good construction quality and avoided work-group attrition). Although practices varied greatly—indeed one of the project principles was that housing designs, work obligations, and time-elapased before taking title varied according to climate and local preferences—beneficiaries generally raised the walls on professionally built foundations, but they rarely worked on the electrical installations or plumbing. In the final years of construction (and currently in the housing activities of the follow-on Flood Prevention project) beneficiaries performed numerous tasks: work group formation; meeting attendance; clean and level building sites; load and unload building supplies; manage materials distribution between homes; control inventory; keep attendance records; evaluate group participation and determine punishments; cut and tie structural steel; mix, carry, and pour mortar and concrete; raise walls; dig ditches and dry wells; plaster; hang doors and windows; attach roofing sheets; install insulation and ceilings; paint; and plant trees and landscaping plants. Project staff or professionals usually handled more complex aspects of construction: community layout, housing design, setting of minimal safety standards, subdivision, selection of relocation areas, beneficiary selection, urban layout, selection of suppliers, project administration (beneficiaries were given vouchers not money), electrical and sanitary installations, survey and plotting, terms of reference for work contracts, crafting of doors and windows, creation and installation of metal frame elements or structures.

2.20 In some communities women received the title to the property. In others, women were given preference in the event of separation or divorce. Project records indicate that women performed 36 percent of the total labor. Materials were distributed following inspection of work completed. At different stages in the construction, families received vouchers for a specified amount of money that they could use to purchase building materials at their distributor of choice.

2.21 The new communities are impressive. The audit mission found that most families have greatly improved their units, building additional rooms, putting in tile floors, kitchen counters and cabinets, gardens and amenity plantings. Somewhat surprisingly, social impacts match quality of life improvements. People are genuinely proud of having worked to build their homes, and this pride is reflected in other aspects of their lives. Many individuals who had never worked in construction (or only worked as casual labor) have learned enough about a trade to work as a mason, carpenter, electrician, plumber, plasterer, or painter. A few women now work in the construction trades because of what they learned. But beyond finding better employment, many project beneficiaries have seen their social status change. In part, having running water that permits bathing and routine laundering has had an impact. But so has the fact that instead of living in cardboard shacks at the edge of town, they now live in urban communities largely indistinguishable from those of the middle class. Just having a numbered address on a real street makes it easier to fill out a job application and perform confidently in an interview.

Unsuccessful Housing Efforts

2.22 In a few communities during the very early stages of the project, repairs were attempted to a few flood-damaged homes. This approach was quickly abandoned because repair costs could exceed the cost of building new units; inspection, diagnosis, and supervision expenses were excessive; and the resulting buildings were still unsafe structurally and in the floodplain. Another experience, which resulted in better-quality buildings but which still should not be replicated, was giving the

beneficiaries the option to rebuild in the same dangerous location using stilted homes. Although houses on stilts were built in only three communities, the following negatives could be observed:

- The houses were expensive to build, so that interior space and other amenities had to be reduced.
- Despite instructions to the beneficiaries not to close in the ground-level area (which would increase the vulnerability of units to the destructive forces of flowing waters) they walled in those areas anyway.
- Construction on adequately reinforced stilts was too costly to replicate. In recent years, many families have moved to those flood-prone areas without receiving a new house; there were no reported or observed cases of such families building raised houses. This means that the project encouraged the continuing occupation of dangerous areas by families who could not adequately protect themselves.¹⁵

2.23 Yet another experience that was judged a failure by project staff and beneficiaries alike was the use of prefabricated wooden housing. In most communities where they were used, they did not fulfill local aspirations (they were perceived as temporary shacks, not formal, permanent housing solutions). There was little local experience with painting or otherwise preserving wooden housing. Also, the less intensive construction effort required to erect such structures meant that most social benefits were forfeited, and the receipt of prefabs reduced the beneficiaries from active participants to passive recipients with little sense of ownership.

Schools

2.24 The audit mission also visited about 10 reconstructed and newly built schools. Without exception they were of good quality, they were in daily use, and they were being well maintained. A few were in difficult-to-access locations, such as those on the delta islands (children are brought to it by boat, as were the construction materials), or of architectural interest (see below).

Preservation of Cultural Patrimony

2.25 It is quite common for the Bank to support the restoration and conservation of cultural heritage sites during the implementation of reconstruction projects. In this project, regionally important “built heritage” was restored in the island community of Isla del Cerrito.¹⁶ The island was a command center during the War of the Triple Alliance (1865–70),¹⁷ and it housed a military hospital. During the 1930s, with substantial international support, Isla del Cerrito was turned into a self-contained community for lepers. A tiny narrow-gauge railroad provided transportation, and an extensive complex of Disney-esque buildings provided housing, commercial services, and medical care. The more important public buildings were architecturally European, with elaborate ornamentation including French-manufactured tile roofs, soaring towers and gables, and whimsical pagoda-roofed dormers.

2.26 The administrative center, which includes the most elaborate edifices, was not affected by flood waters, but the buildings were used to house families evacuated from the floodplain, and as a result of prolonged heavy use, they suffered severe deterioration. The project meticulously rebuilt and refitted two large buildings, now used as a high school and a medical/dental center. The approximately US\$300,000 restoration respected the original exterior designs while converting the

15. In recognition of this problem, the follow-on project has returned to these communities and is constructing community shelters on high ground to house the families that will be forced to evacuate when rivers rise.

16. The Chaco provincial government declared the island to be important provincial cultural patrimony.

17. Argentina, Uruguay, and Brazil were allies in the war against Paraguay.

interiors for modern use. The beautifully preserved structures maintained the unique ambiance of the island and contributed to making Isla del Cerrito a place still worth visiting. Subsequently, a public/private partnership converted other historic buildings from the period into a modern hotel that spearheads a reinvigorated local tourist and sport fishing businesses. Additional infrastructure financed by the project included a restored waterfront, levees, parkland (outside the levees, removing squatters to permanent communities with new housing created the opportunity for such urban amenities), and paved walkways/jogging paths.

Factors of Performance

2.27 Many factors contributed to the project successes, including the following, which were identified by SUCCE staff in a self-evaluation seminar:

- *Staff commitment.* National and provincial staff alike were deeply committed to making the project a success. The commitment of staff assigned to the housing component was critical to overcoming beneficiary resistance, developing a workable approach that was sensitive to beneficiary aspirations, and dealing with supply and construction difficulties.
- *Adapting to local conditions.* Housing styles, work regulations, settlement patterns, and many other details were adapted to local and regional patterns. Although this was time-consuming, a “one size fits all” approach would have been counterproductive.
- *Dedication of the Bank task manager.* Project staff repeatedly cited the dedication of the task manager as an important factor in successful implementation. They noted particularly that frequent Bank missions always included the task manager. And they mentioned that missions always visited numerous sites, that all sites were visited at least once, and that sites experiencing problems were visited first and often until the problems were resolved.
- *The use of a consultant supervisor.* The general supervisor has been an institution in the three flood-related projects. The supervisor, paid by the project, has the dual function of reporting to the task manager and the borrower about daily project progress and the functioning of the project’s administrative units. The project’s supervisor was invaluable in project reporting and in providing solutions to technical problems. It could be observed that the supervisor facilitated the work of the executive director. Unpopular decisions could be excused as necessary responses to deficiencies identified by the supervisor, and outside interference could be thwarted by noting that the supervisor would report it to the Bank.
- *Frequent audits.* Although frequent auditing (every six months) raised project administrative costs, it prevented small problems from becoming large ones. Requiring progress reports (every four months) also helped to ensure that there was progress to report.
- *Team meetings.* Frequent meetings of the entire SUCCE, of the entire SUCCE staff with SUPCE staff, and of central and provincial staff working on the same subproject, were essential during the early years to facilitate the exchange of experience and share details about local successes and failures.
- *Keeping centralized copies of all province-level reports.* Reporting to the Bank and to the borrower was facilitated by ensuring that copies of all important reports and documents produced in the provinces were sent to Buenos Aires. This also improved communication and coordination between SUCCE and the SUPCEs.
- *Procurement training.* Early training in procurement helped avoid bottlenecks. Bank flexibility in allowing expenditures of up to 1.5 percent of total project cost to be approved by SUCCE also speeded disbursements.
- *Procedural manuals.* SUCCE developed manuals that standardized administrative and financial processing early in the project for use by the SUPCEs. These proved to very useful to provincial staff and ultimately resulted in central and provincial staff “speaking the same language.”

3. Assessment of Performance

3.1 The project fully achieved its two objectives, but one of those objectives was inadequate and shortsighted. It did a fine job of financing reconstruction needs in the seven afflicted provinces, *constructing a staggering amount of infrastructure under 430 subcomponents*. With regard to this objective, the audit would argue that it went a step further, addressing some of the fundamental infrastructure weaknesses of the affected provinces, and making important flood vulnerability-reducing investments. It also provided an effective (but temporary) institutional framework for coordination and implementation of government disaster responses. This structure has remained in place to support the implementation of the two Bank-financed follow-on projects. Local staff charged with coordination performed extraordinarily well in all three projects. They and their colleagues in charge of implementation were committed and innovative. Unfortunately, disasters are continuing to occur, and severe flooding will still pose problems after the follow-on projects close. With hindsight, it is clear that the institutional objective did not go far enough. The mission observed many indications that SUCCE personnel have become the national disaster experts: they were called to conferences and high-level meetings in that capacity on several occasions during the audit mission. But most of them are not public employees. Without continuing Bank support they would scatter to new jobs in other sectors. The project's institutional achievements highlight how important it would have been to do a bit more. Partially as a result of the institutional vacuum that the closure of SUCCE would leave behind, **project outcome is only rated as satisfactory**.

3.2 Nevertheless, in terms of achieving what it set out to do, the Flood Rehabilitation Project is an example of best practice. Flood control and drainage improvements withstood the 1997/98 El Niño. The ICR re-estimated the internal economic rate of return in a small sample of cities at about 35 percent, based on estimated losses avoided. It could be argued that social marginality has been largely overcome in the communities where new housing was built using the self-help construction methodology. Infrastructure cost overruns and design shortcomings (see discussion in *paras. 2.10 and 2.11*), the failure to create a sustainable disaster-specialized institution (see *para. 3.5*) and unintended environmental impacts (*para. 2.11*) prevented the project from receiving a higher rating, however.

3.3 For reasons that will be more fully explored in the next chapter, project delays (four extensions of loan closing) did not significantly influence the outcome rating. The 1995 "Tequila" crisis was beyond the control of the project, and it caused (national and provincial) delays with counterpart funding. The original implementation period (mandated by the requirements for Emergency Recovery Lending) of three years actually comprised only 30 months from effectiveness. Reports provided by the borrower argue that project delays need to be evaluated in the context of over-ambitious appraisal estimates—some so unrealistic that Bank staff cannot ever have imagined that the project would meet them. At one point, for example, it was thought that in an eight-month period the project could build 5,600 houses in 120 towns in six different provinces (requiring arrangements with six different provincial governments) in difficult-to-access terrain along 2,000 miles of the Paraná, Paraguay, and Uruguay rivers. The capacity to work at such a scale and under such varied conditions takes years to develop, even using prefabricated structures and contractors.

Institutional Development Impact

3.4 **Institutional development impact** is rated as **modest** because the project only increased the country's ability to effectively use its human, organizational, and financial resources to a limited extent. This rating is a downgrade from the ICR rating, and is the only ratings difference with that document. Although the SUCCE carried out its responsibilities in a highly satisfactory manner, only the use of highly skilled consultants permitted it to do so. During the audit mission, project staff were receiving long-term weather forecasts that reported disturbing indications of the coming of another El Niño; this would not be the first time its (normal) seven-year cycle has been reduced to two years.

Whether El Niño comes sooner or later, disasters are becoming more frequent and more severe in Argentina, just as they are in the rest of the world. A centralized disaster management agency would ensure that the lessons learned from past disasters (and three Bank-funded projects that responded to them) were adequately taken into account in the future. Creating a temporary disaster management agency without permanent staff or institutional memory is somewhat pointless in a country that experiences severe flooding two out of every three years. Any Bank support for increasing institutional capacity in this area should be contingent on maintaining the highly committed and experienced staff in key positions.

Sustainability

3.5 The **sustainability** of the project-financed infrastructure is rated as **likely**. The housing is being steadily improved by its occupants, and the schools, roads, and bridges are receiving better than adequate maintenance because there is an institution in charge of performing such tasks. Where the flood control works have found an “owner” they are being adequately maintained. Major problems still exist in this area, but in the follow-on projects the SUCCE is devoting considerable attention to the technical and institutional problems remaining and it is deemed likely that it will be successful with the bulk of what remains unowned.

Bank Performance

3.6 **Bank performance** was **satisfactory**. The Bank was highly responsive to the clients’ need for a rapid response to the flooding. Task manager dedication was exemplary—particularly the practice of regularly visiting *all* project sites—and it contributed to a smooth implementation process, and the rapid resolution of problems. Bank performance was not rated more highly because the responsibility for accepting inadequate engineering designs and construction delays caused by the necessity to re-evaluate those designs belongs to the Bank. Bank regulations also constrained Bank performance in this project. In conformity with the instruction of Operational Directive 8.50, during appraisal Bank staff identified measures to address future flood protection. The excessively short implementation period stipulated for emergency recovery lending led the project team to consign too many longer-term measures to follow-on lending—even though extensions for ERLs are commonplace. The perceived need for speed almost led to a housing component based on prefabricated housing that would have enormously reduced project impact. Having disaster-experienced professionals on the appraisal mission would have led to a better balance between structural and non-structural flood control measures, and improved quality at entry (they would have had a clearer understanding that some of the more complex infrastructure works could not possibly be completed in the time available).

Borrower Performance

3.7 Delays in loan closing/fulfilling the conditions of loan effectiveness and the technical inadequacy of the more elaborate off-the-shelf designs compromised the attainment of important objectives to some degree. **Borrower performance** is rated **satisfactory** due to commendable compliance with loan covenants and the admirable performance of the SUCCE and SUPCEs, and the consultants they employed.

4. Conclusions and Lessons/Recommendations

4.1 In the Flood Rehabilitation project, critical physical and economic infrastructure was rehabilitated in a relatively short time. The audit has praised its implementation and conceptual

achievements considerably. While in many respects it is a model for future efforts, many aspects of the project should not be duplicated uncritically, and others not at all. Bank-wide experience has shown that reconstruction of damaged infrastructure alone is imperative but insufficient, and that while a quick response to natural disaster is important, it is equally important to identify local vulnerabilities and determine how to reduce them in ways that lead to *durable* solutions. Similarly, Bank experience in many countries clearly shows disaster strikes the poor disproportionately because they tend to occupy dangerous zones and live in low-quality housing. As the Bank increases its poverty focus, disaster prevention should be prioritized. Therein lies the rub.

4.2 Flood disasters in Argentina should not take the Bank by surprise. In a country where major cities are flooded two out of every three years, the government, aided by the Bank, should be ahead of such eminently foreseeable disasters; with stable, dedicated institutions and the relevant legislation prepared to deal with them. In most borrower countries, the annual loss of life and property through disaster is increasing because of uncontrolled population growth, migration from rural areas to the cities, settlement of low-lying floodplains, rising sea levels, and a 50 percent increase in the number of extreme weather events during each decade of the last century. In the absence of adequate prevention, property damage is the inevitable result of the interaction between extreme weather events, environmental degradation, and inadequate infrastructure and services. Developing countries that do not have and enforce legislation that prevents the occupation of hazardous sites are particularly vulnerable.

4.3 The Bank urgently needs to change its mentality regarding disasters: it needs to discard the notion that there is an emergency phase when anything is permitted. In vulnerable countries regular lending must help to reduce disaster losses before disaster strikes. Emergency recovery lending needs to overcome the tendency to restore the *status quo ante* and to begin focusing on long-term issues immediately. There are good reasons why comprehensive disaster responses take longer than three years, and where a follow-on project cannot be guaranteed, the arbitrary time limit established by Operational Direct 8.50 should be revisited—following many rapid onset disasters vulnerability reducing components require significant and sustained social mobilization. Five years is a more realistic implementation period: The sustainability of infrastructure reconstructed after disaster is always in doubt when long-term measures to address disaster mitigation are absent. Options to be considered should always include financial incentives, land use and management practices, a review of land tenure patterns, and upgraded building codes. After a disaster it is usually not a good idea to leave important components to a follow-on project.¹⁸ Emergency Recovery Loans rarely are completed in the stipulated three-year time frame, and borrowers tend to consider lending for disaster prevention a much lower priority a few years after the event.

4.4 One of the least understood aspects of reconstruction is that the manner in which the recovery process is managed has extremely long-term impacts on the development process of the disaster-stricken nation. Poorly crafted reconstruction strategies can foster paternalism and dependency, and they often establish a pattern that governments find difficult to break when the next disaster comes. During the recovery from each emergency, measures are almost always needed to reduce the risk of similar future disasters and to safeguard people at risk. A question that needs to be raised is—could different objectives for this project have led to an even better result. Quite probably, and some of the ways they could have been modified are:

- Components could have been designed to permanently and sustainably increase local capacity to manage future emergencies from the outset. In a country as disaster-prone as Argentina, was it a good idea to make the only disaster-specialized body a temporary agency staffed by consultants paid with borrowed money?

18. The PAR for the Rio Flood Reconstruction project in Brazil (Loan 2975-BR) also deals with this issue.

- Non-structural measures should have figured more prominently in project objectives because the lack of infrastructure maintenance was partly responsible for the disaster in the first place.

4.5 With the two follow-on projects, the Bank has financed three flood-related loans and there is still no permanent institution to deal with disaster. And the institutional mechanism to maintain much of the infrastructure built/rebuilt at such great cost is not yet defined. With hindsight, one of the conditions of effectiveness should have been to require the passage of the disaster legislation on land-use and the establishment of permanent and/or responsible institutions. These things are still under discussion now, but the government has much less motivation to act now than it did three loans ago. The SUCCE/SUPCEs and other structures created under this loan did an outstanding job under highly challenging conditions. Yet during the audit mission there was talk of moving the SUCCE to another ministry, and even of replacing the trained technical staff with novices. It would seem that building on past successes is what is called for now, rather than starting again from zero.

4.6 The goal of restricting floodplain development is better achieved by fiscal incentives, improved land use planning and management practices, and sound environmental policies than by physical measures. The need for a broader and more effective approach to maintenance is underlined by audit observations of rapid infrastructure deterioration in a few critical areas. In the 1992 flood, much damage was caused by the failure of earthworks that had not been maintained as designed, and the only failure following the 1997 flood was also due to inadequate maintenance. The lessons suggested more directly by the project experience are detailed below.

4.7 **Avoid Pre-fabricated Housing.** The use of prefabricated housing in post-disaster reconstruction should be avoided unless it is the only way to protect the victims from (life-threatening) extreme cold. There are many low-cost, temporary measures that will keep families and their possessions dry. It cost as much to build wooden shacks as it did to allow the families to provide themselves with permanent brick homes.

4.8 **Avoid Creating a False Sense of Security.** Emergency projects should not finance housing reconstruction on at-risk land. Rebuilding houses in flood-prone areas using stilts should be avoided because they encourage the continuing occupation of dangerous areas. While the project was able to provide a measure of safety for just a few families (and even for them at a high cost), many other people who could not afford to build elevated homes opted to remain in the same area. Other families moved in subsequently. Although levees are only secure when they have been properly designed and well maintained, it is doubtful if the people living within their protection are informed consumers of the safety such structures provide. Consequently, far from organizing to demand their upkeep, they tend to contribute to their destruction. In one city where stone-filled gabions formed the base of the main levee, locals broke apart the metal mesh to remove stones to make barbecue pits, for fishing, and to use as anchors. Another issue is the establishment of effective early warning and evacuation systems. It is not clear that the general public understands that the earthworks protect them against frequent but smaller floods. The maximum credible incident of severe flooding will overtop the defenses, and local residents need to understand the importance of rapid mobilization at the right time. Without continual consciousness-raising, people may come to believe that they are adequately protected, and not begin to move until it is too late to escape.

4.9 **Self-help Construction Can Work in a Post-Disaster Context.** The experience also indicates that a similar approach can have an important social impact in marginal urban areas throughout the region. The participation of disaster victims in planning and designing the new settlements was a key to success, as was providing a housing solution that met local aspirations and climatic conditions. A project goal that made the new settlements much more attractive from the outset was to preserve trees and shrubs whenever possible. This was done even if it meant changing the settlement plan. Involving beneficiaries in implementing and managing the housing component—and especially the use of the vouchers—resulted in the efficient and transparent use of construction

materials. Work was delayed considerably because the purchase of tools was not covered under the project. Another practice that constrained progress in the housing area was assigning staff to work on non-housing tasks. The progress of the work groups is so dynamic, and the impact of not having a key decision-maker on-site when a problem comes up requires that staff supervising self-help construction do so exclusively.

4.10 Resettlement. Resettlement fundamentalism is leading to unnecessarily costly and time-consuming activities: current procedures do not apply very well to urban squatters in post-disaster situations. Of course with a large enough incentive, anything is possible. The audit noted that dangerous areas were abandoned without recourse to an involuntary resettlement plan. But it did not mention how fearful Bank and project staff were that someone would raise this issue. One reason the incentives were so attractive in the housing component was so that *all* residents in dangerous zones would leave voluntarily. In other words, catering to a few recalcitrants caused staff to up the ante. The Bank's Operational Directive on involuntary resettlement is motivated by the importance of respecting cultural and social aspects of the indigenous populations. In practice, however, the spirit and letter of the directive can become confused. In rural areas, indigenous people have usually been in the same site for generations. Moving them from the areas they traditionally occupied can cause major social trauma. It needs to be recognized that the situation of urban squatters illegally occupying disaster-prone areas (often requiring repeated public assistance after heavy rains and flooding) is somehow different—especially when they have only lived at their current place of residence for a few months.

Basic Data Sheet

ARGENTINA FLOOD REHABILITATION PROJECT (LOAN 3521-AR)

Key Project Data (Amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of Appraisal estimate</i>
Total project costs	270.0	258.7	95

Cumulative Estimated and Actual Disbursements

	<i>FY93</i>	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>
Appraisal Estimate	68,000	153,000	170,000			
Actual (US\$M)	5,871	48,303	118,937	152,220	163,811	167,202
Actual as % of appraisal	8.6	31.6	70.0	89.5	96.4	98.4
Date of final disbursement: July 22, 1998						

Project Dates

	<i>Original</i>	<i>Actual</i>
Identification	June 15-July 4, 1992	June 16-July 4, 1992
Preparation ¹⁹	June 15-July 4, 1992	June 16-July 4, 1992
Appraisal ²⁰	June 15-July 4, 1992	June 16-July 4, 1992
Negotiations ²¹	August 24-26, 1992	August 24-26, 1992
Board Presentation	Not available	September 29, 1992
Signing	Not available	June 7, 1993
Effectiveness ²²	October 30, 1992	March 24, 1993
Midterm Review ²³	October 1993	Not available
Project Completion	September 31, 1994	November 30, 1997
Closing date ²⁴	March 31, 1995	March 31, 1998

Annex A

Staff Inputs (staff weeks)

	<i>Actual Weeks</i>	<i>Actual US\$000</i>
Preparation to appraisal	17.0	50,832

¹⁹ As per the Memorandum of the President.

²⁰ As per the Memorandum of the President.

²¹ As per the Memorandum of the President.

²² As per the Memorandum of the President.

²³ As per the Technical Annex text.

²⁴ Loan Closing Date extended four times from March 31, 1995, as follows:

to March 31, 1996, under amendment of November 9, 1994

to December 31, 1996, under amendment of November 13, 1995

to September 30, 1997, under amendment of December 19, 1996

to March 31, 1998, under amendment of September 26, 1997

Appraisal	27.7	74,667
Negotiations through board approval	5.7	18,099
Supervision	103.9	291,464
Completion	9.6	9,212
Total	163.9	444,274

Annex A

Mission Data

	Date (month/year)	No. of persons	Staff days in field	Specialization represented	Performance rating ²⁵		Types of Problems
					Implementation Status	Development objectives	
Pre-appraisal	7/92	12	19	All infrastructure subsectors			
Appraisal							
Supervision 1	10/92	2	12	TM, Consultant	1	1	Accelerated presidential decree to allow Loan signing
Supervision 2	12/92	1	3	TM			Completion of Loan signing steps
Supervision 3	3/93	1	15	TM	2	1	Steps to Loan effectiveness
Supervision 4	6/93	2	18	TM, Highway Engineer	2	1	Province of Buenos Aires delay in implementation
Supervision 5	10/93	2	17	TM, Engineer	2	1	Implementation delays in Buenos Aires and Formosa and delay in delivery of National counterpart funds.
Supervision 6	2/94	1	3	TM			Implementation delays in Buenos Aires and Formosa
Supervision 7	3/94	2	12	TM, Engineer	2	1	Same as above
Supervision 8	5/94	1	1	TM			Partial mission
Supervision 9	7/94	2	12	TM, Engineer	S	HS	Withdrawal of non- essential subprojects that were not awarded by June 30, 1994

25. 1 = No significant problems, 2 = Moderate problems

Annex A

	Date (month/year)	No. of persons	Staff days in field	Specialization represented	Performance rating ²⁶		Types of Problems
					Implementation Status	Development objectives	
Supervision 10	12/94	2	14	TM, Environmentalist	S	HS	Flood Protection Preparation and procurement delays
Supervision 11	5/95	4	18		S	HS	Delays in supply in National counterpart funds
Supervision 12	6/95	1	4	TM			Partial mission
Supervision 13	9/95	1	14	TM	S	HS	Delays in supply in National counterpart funds
Supervision 14	12/95	3	11	TM, Engineer (2), Environmentalist			Partial mission, preparation of Flood Protection Project
Supervision 15	1/96	1	6	TM			Partial mission
Supervision 16	2/96	1	3	TM			Technical difficulties with the Laguna Blanca and Costanera works
Supervision 17	5/96	1	14	TM	S	HS	GoA paid 1995 counterpart funds, now delays with 1996
Supervision 18	9/96	1	15	TM	S	S	Timing delays in completion of three major works
Supervision 19	11/96	1	3	TM			Same as above
Supervision 20	1/97	1	7	TM	S	S	GoA 1996 counterpart fund delays and advancement of works in laguna Blanca and Costanera
Supervision 21	2/97	1	3	TM	S	S	1996 National counterpart fund
Supervision 22	3/97	4	15	Division Chief, TA, Engineer, Environmentalist			Completion of the Laguna Blanca works
Supervision 23	5/97	1	11	Engineer	S	S	Pending works
Supervision 24	6/97	1	9	Engineer			Technical visit with members of SUCCE to several US agencies dealing with flood and emergency management
Supervision 25	7/97	1	1	Engineer			Review of pending issues
Supervision 26	10/97	2	1	TM, Sector Leader			Closing date extension
Completion	3/98	3	14	Engineer	S	S	ICR/final supervision mission

26. 1 = No significant problems, 2 = Moderate problems

Annex A**Other Project Data**

<i>FOLLOW-ON OPERATIONS</i>			
<i>Operation</i>	<i>Loan no.</i>	<i>Amount (US\$ million)</i>	<i>Board date</i>
Flood Protection Project	4117	420.0	October 1997
El Niño Emergency Flood Protection	4273	35.0	January 20, 1998