

Chapter 6 Ex-post Evaluations in FY1997: an Overview

This chapter comprises an overview of the findings from the principal ex-post evaluations performed by MoFA, JICA, and OECF. However, owing to the sheer multitude of projects involved, it does not cover any of the evaluations performed by overseas MoFA diplomatic offices, by recipient countries, by local consultants, or by JICA offices abroad. MoFA-led evaluations are discussed in the full version of this report. Details on JICA and OECF evaluations are respectively presented in the Project Evaluation Report and the Post-Evaluation Report for OECF Loan Project.

1. Ex-post Evaluations by MoFA

1.1 Country Program Evaluations

i. Paraguay

This evaluation was performed by a team headed by Prof. Akio Hosono, Director of the University of Tsukuba Institute of International Politics and Economics. The team included MoFA personnel as well as Shigeo Osonoi, Associate Professor, School of Foreign Languages, Nanzan University; Hisatoshi Tajima, Chief Lecturer, Faculty of Humanities, Josai International University; and Shuji Noguchi, Director of Social Infrastructure Development, Systems Science Consultants, Inc. The evaluation team employed a macroscopic focus in striving to assess how well Japanese ODA to Paraguay had contributed to economic advancement, a higher standard of living for the population, and improved stability.

Japan began extending ODA to Paraguay in 1952. That aid has assumed a variety of forms, including loans, grants, and technical cooperation. Aid priorities have been concentrated in four broad sectors: agriculture, forestry, and livestock farming; infrastructure; human resource development, and health care. These priorities were suited to conditions in Paraguay, and consistent with the country's national development plans. The projects selected for evaluation were generally relevant.

The evaluation team concluded that instead of maintaining conventional aid strategies, it will be necessary to explore alternative forms of ODA for Paraguay that are capable of accommodating the new setting created by domestic political and economic trends as well as changes in the international climate. Further, in formulating future aid policy for the country, several factors were cited as deserving attention, including Paraguay's budget shortfall, poor levels of coordination within its government apparatus, and the need for Japanese specialists to improve their exchange

of views and information with each other as well as to gain a better understanding of their Paraguayan counterparts.

ii. The Philippines

Construction project for a two-level crossing in metro Manila.

By 1997 the Philippines had become the third-largest recipient of Japanese ODA on a cumulative basis. In fact, Japan accounted for roughly half the total in bilateral aid provided to the Philippines. MoFA commissioned a three-member evaluation team to visit the Philippines and evaluate the effectiveness of Japanese ODA in general. The team was headed by Prof. Akira Takahashi of Kokushikan University, and included Prof. Yukihiro Torikai of Tokai University and Prof. Katsunori Nariya of Tokyo University of Foreign Studies.

After providing a historical summary of development in the Philippines, the evaluation report stated that the country's economy was still on extremely fragile ground and in need of continued foreign aid. Poverty reduction through improved social equality was understood to be the most formidable challenge, and it was concluded that Japan should provide a considerable measure of assistance for undertakings in agrarian reform as an indispensable part of the solution. Although injections of public funding remain essential for projects in poverty alleviation and environmental preservation, the report concludes that privatization and cooperation with the private sector will be necessary for the pursuit of projects that ensure high returns.

1.2 Evaluations of ODA Implementation Systems (Vietnam)

Although the Japanese government suspended most of its ODA to Vietnam after Vietnam invaded Cambodia in December 1978, the aid pipeline was reopened in 1992. Priority sectors for Japanese aid currently include (a) human resources development and institution building, (b) electric power and transportation infrastructure, (c) agriculture, (d) education and health care, and (e) the environment.

The study was performed with the objective of contributing to the improved effectiveness of future ODA implementation frameworks. To that end, it sought to shed light on problems with the Japanese and Vietnamese ODA implementation frameworks and other elements of the setting for aid in general following the resumption of ODA in 1992.

The evaluation team was headed by Tadao Chino, Chairman of Nomura Research Institute, and included Prof. Kenichi Ohno of the Saitama University Graduate School; Ikuo Takeuchi, Vice-chief Researcher for the Department of Regional Studies, Institute of Developing Economies (IDE); Hiromi Fujita, Director, Operations Division, Foundation for Advanced Studies on International Development (FASID); Nobuko Fujita, Head of the FASID Operations Division; and various MoFA and JICA personnel. Key evaluation findings are outlined below.

Despite difficulties faced during the relatively short period since the resumption of aid, the local offices of the Japanese Embassy, consulates, JICA, and the OECF have all been working together to put ODA projects into effect. Additionally, they have maintained close cooperative ties with multilateral institutions and other donors. On the subject of macroeconomic policy, Japan has been drawing from its own amassed research and making recommendations to the Vietnamese government.

A primary school construction project.

Nonetheless, it was pointed out that Japan needs to expand its framework for the implementation of aid. In particular, the fact that Vietnam is a narrow country stretching over a rather broad latitudinal band aggravates the difficulty of pursuing follow-up projects in the south. Study concerning the establishment of southern-based centers for project implementation is therefore needed, along with work to build more efficient systems of information exchange and coordination between headquarters and the field personnel directly engaged in project affairs day-to-day. On the topic of public relations, the evaluation team also cited a need for study concerning the timing of disclosure for better impact.

1.3 Theme-specific Evaluations (Indonesia)

This study was commissioned to the International Management Association of Japan, and involved ex-post evaluations of two Japanese aid undertakings in Indonesia: the Institute Teknologi Bandung project and the Indonesia Export Trading Center project. The evaluation team also explored strategies for cooperation in the education and human resources development fields.

The Institute Teknologi Bandung project comprised two phases funded by OECF aid. The phase 1 project involved the construction of three school buildings for classrooms and research laboratories (for the schools of computer science, marine engineering, applied physics, chemistry, and materials science) as well as the procurement of educational supplies and equipment. The phase 2 project was for the construction of seven school buildings (for the schools of pharmacy, electrical engineering, community and urban planning, architecture, geodesy, and biology, as well as a center for science, technology, and the fine arts), the installation of sewerage systems and other basic infrastructure, and the operation of student exchange programs with counterpart institutions in Japan, Europe, and North America. Both the phase 1 and phase 2 aid projects were designed to provide hard infrastructure in terms of research facilities and equipment. The phase 2 project, moreover, placed emphasis on the student exchange programs (as components of the masters and doctorate degree curricula). These undertakings have improved the opportunities for ITB instructors to earn advanced degrees, and have also contributed to human resources development. In terms of allowing Indonesian students broader opportunities for learning, including exchange study in Japan and the west, the projects have earned high marks.

The Indonesian government has been cognizant of a need for training programs that can foster export growth by offsetting the shortage of personnel for occupations in international trade, and improve the country's capacity in the arena of export product quality control. It requested Japanese assistance for improvements in these areas, and in 1989 built a new export training center with grant aid. In keeping with plans for the training center program, Japan sent a total of 38 specialists to Indonesia: 16 on long-term assignments, and 22 on a short-term basis. Training courses were launched in FY1992, with participation by more than 1000 trainees on average every year. As of FY1994, 6062 trainees had taken part in the center's courses; of that total, trainees from private companies accounted for more than 60 percent. This share effectively underscores the high ratings that the training courses have earned from the private sector. Further, over 80 percent of all surveyed trainees have expressed satisfaction with their courses.

Several recommendations and observations were made with respect to the future orientation of education-related aid to Indonesia. In particular, education sector surveys and analyses were advised with the goal of making middle school education compulsory (a top priority), followed by the formulation of aid packages for refinements at the high school and the university education level. Additionally, it was recommended that the feasibility of financial aid aimed at counterbalancing research expenses and other current expenditures be explored in earnest once Indonesian educational institutions appear capable of financially supporting their own advancement. Finally, MoFA was urged to work out comprehensive aid packages in collaboration with JICA and OECF.

1.4 Joint Evaluations (with the Department for International Development of Britain)

Inspection tour of school facility.

An agreement was reached with the British government for a series of joint evaluations of education-related aid projects implemented by the two countries. The objective was to identify pathways to future development assistance. For that purpose, the evaluations examined five criteria: relevance of the project, degree of achievement of the original objectives, impacts, efficiency of implementation, and sustainability. The joint evaluations were also designed to provide useful lessons in development project formulation as well as contribute to improved evaluation strategies and modalities.

As its first stage, three Japanese aid projects in the Philippines schoolhouse construction, education facility expansion, and the supply and installation of middle-school facilities and equipment had been chosen to be examined.

The local evaluation team from Japan was composed of Prof. Hiromitsu Muta (team leader) of the Tokyo Institute of Technology, Taro Numano, senior researcher, National Institute for Education Research, Shiro Arai, Overseas Project Management Consultants, and MoFA personnel. The British team included Celia Male (team leader), Social Development Consultant and Susan Durston, Team Leader Advisor for Primary Community Schools' Project in Malawi.

All three of the grant projects have been implemented in accordance with policies of the Philippine government, and were considered to have effectively supplied real improvements in education. However, several areas demanding remedial action were also noted. The schoolhouse construction project counted as the first instance of facility construction aid utilized in a wide area. As such, due primarily to the quality of the furnishings and fixtures, the completed structure proved to be relatively expensive. Drawing lessons from this experience, however, the subsequent facility expansion project succeeded in cutting costs substantially. Problems were also observed on the recipient side. In some instances, for example, supplied equipment had not been put into full use. The evaluation report thus underlined the need not only for better infrastructural planning, but also for a better balance with the capacity of available human resources.

The joint evaluations were complemented by a perspective on social infrastructure development, one of the areas where Britain has focused its priorities in recent years. This feature was

considered to be of major significance in terms of enhancing the multifaceted outlook and objectivity of the evaluations themselves.

1.5 Joint Evaluations with NGOs (Bangladesh)

Inaugurated in April 1996, regular NGO/MoFA conferences provide a forum for dialogue on suitable modalities for mutual cooperation. Reciprocal lesson-sharing and joint evaluations with NGOs were proposed during conference discussions as a means of exploring avenues for substantive cooperation between NGO and ODA personnel. The goal is to provide NGO and ODA personnel opportunities to exchange experiences and recommendations through reciprocal evaluations of each other's aid projects. As an outgrowth of this idea, an evaluation team was sent to Bangladesh in October 1997.

This initial effort in collaborative evaluation focused on a comprehensive group training project implemented by Shapla Neer (citizen's committee in Japan for overseas support) and two ODA projects: Joint Study on Rural Development Experiment and the Model Rural Development Project.

The evaluation team included Michiya Kumaoka, president of the Japan International Volunteer Center, Makoto Nagahata, International Cooperation Staff of Shapla Neer, Tomoo Hozumi, program coordinator of Save the Children Japan, Toshihiko Suda, Assistant Manager for Norinchukin Research Institute, and MoFA personnel.

The evaluation findings emphasized the importance of information-sharing as a means of fostering more-effective aid implementation, and underscored the value of having NGOs with long-term local experience and solid track records take part in project activities from the implementation stage.

The joint evaluation approach has earned strong marks as a highly effective way of identifying project weaknesses and helping NGOs and ODA personnel widen their outlook for future collaboration in the aid field.

1.6 Evaluations by Third-party Experts

i. China: Qingdao Port Expansion Project, Qingdao Road and Communications Development Project

To determine the effectiveness of Japanese aid in removing infrastructural bottlenecks to economic advancement in China, MoFA commissioned an expert in developmental and international economics, Prof. Hirohisa Kohama (of Shizuoka University's Faculty of International Relations , and also a member of the AID Evaluation Reviewing Panel) to evaluate two transportation-sector projects in the key coastal city of Qingdao.

Qingdao serves as an important port city in Hebei Province. As an undertaking designed to boost the port's cargo handling capacity and thus help it accommodate growing demand for cargo transport services, the Qingdao Port Expansion Project involved the construction of new berth facilities in Huangdao district along with a 40 km rail line connecting to Jiaozhou Prefecture further inland. The evaluation of the Qingdao Road and Communications Development Project was focused on the road-related work, which comprised construction of the new 67.8 km Jiaozhou Bay Circular Highway, a road linking the Huangdao district with the traditional harbor area of downtown Qingdao.

Prof. Kohama noted that the Qingdao Port Expansion Project was based on an economically sound decision to develop the Zenwan district, which, as a district of fishing villages, had room for new growth, in contrast to the old harbor district which is close to downtown Qingdao, and where expansion would have been difficult. As undertakings that integrated the construction of new port, rail, and road infrastructure, both projects were rated as having helped to reduce vessel berthing costs and cargo transport times while expanding Qingdao's cargo handling capacity and contributing to the economic advancement of surrounding districts.

ii. Jordan: North Ghors Conversion Project and Project for Improvement of Maintenance Equipment for Water Supply Facilities

Farm irrigation project in North Ghors district

To explore suitable forms of Japanese aid for the effective utilization of precious water resources in Jordan, a country in an arid zone, MoFA evaluated two projects in the water-supply field. For this purpose, it commissioned Prof. Manabu Shimizu of the Faculty of International Studies at Utsunomiya University, a scholar who has led Middle East research by the Institute of Developing Economies.

The North Ghors Irrigation Infrastructure Modernization Project was designed to stabilize and improve arid district agricultural output by harnessing modern irrigation methods for the careful use of valuable water resources. Prof. Shimizu pointed out that the project had significantly reduced water theft and evaporation and improved the farming population's views about water utilization.

The Project for Improvement of Maintenance Equipment for Water Supply Facilities was aimed at reducing leakage from aging water supply infrastructure, and as such, involved work to upgrade maintenance equipment at three repair facilities. Prof. Shimizu concluded that the central repair facility in the capital of Amman had effectively utilized its maintenance equipment, shortened repair downtime, and in other ways had improved its water system maintenance capacity. On the other hand, he noted that equipment for the regional repair facility in Irbid had yet to be put into full use due to local government snags that had hampered construction of new facility structures.

iii. Zimbabwe: Rural Water Supply Project, Project for the Construction of Medium Size Dams in Masvingo Province, Mukotosi School Project

Kenichi Kono, editorial writer for the Mainichi Shimbun, was commissioned to evaluate several projects for the purpose of making recommendations and drawing parallels of value to the future formulation and implementation of aid in Zimbabwe.

The Rural Water Supply Project was a grant-based venture involving the provision of well-drilling equipment and related technical guidance, and driven by the objective of improving the standard of living for local residents. The project led to the drilling of 309 wells that were usable even during periods of drought, and in this respect, it afforded vast improvements in the local quality of life. However, to enhance the effectiveness of such aid, Kono recommended that Japan also implement water projects with an irrigation focus in addition to the provision of water for household use.

Another grant-based undertaking was the Project for the Construction of Medium Size Dams in Masvingo Province. It was designed to build six medium scale dams for irrigation use as well as associated infrastructure including canals for the supply of water from the dams to village-based reservoirs. The evaluation credited the project for significant gains in farm productivity; for example, the growing season for maize multiplied from one to three per annum.

The Mukotosi School Project employed grassroots grant aid for renovations to five aging Mukotosi Elementary School structures and the provision of essential educational equipment and supplies. The evaluation found that the project had improved the educational environment, yet recommended that Japanese instructors assigned to Zimbabwe put more emphasis on such subjects as music and gymnastics.

In reviewing these projects, Kono cited a need for heavier injections of aid into undertakings of narrower scope if Japan is to achieve greater impact with limited ODA budget resources. Additionally, he stressed the importance of steps to better educate the Japanese public about Africa if the government wanted to win greater public acceptance of and support for assistance to Africa.

iv. Senegal and Mauritania: Project for Development of Small-scale Fishery Enterprises, Project for Development and Promotion of Coastal Fishery Industry

A specialist in international economics, Prof. Minoru Ohbayashi of Ryukoku University was commissioned to evaluate two grant-based fishery projects in Senegal and Mauritania.

The Senegalese project involved the construction of a fishery support center in the village of Missira, about 210 km southeast of the capital city, Dakar. Ice machines, refrigeration units, generators, commercial fishery equipment, and test vessels were also supplied as part of the project.

The evaluation concluded that the equipment had been installed without difficulty on center premises and placed into proper use. The project had the following objectives: (a) improvements in the fishery product distribution network deriving from construction of the new center; (b) expanded small-scale fishery output and better fishery product quality thanks to the adoption or installation of new fishery tools and test equipment; and (c) local economic development and a better standard of living for fishing households. It was determined that retailing channels for the center itself had expanded. Further, the 1992 total (1522 metric tons) for fishery harvests in the Missira district was up about 50 percent on the level registered in FY1989, thus indicating that the project had met its initial goal of boosting fishery output. However, because coastal fishery resources in the area had been dwindling, fishing hauls since then were characterized by a flattened trend. (In value terms, the 1992 harvest amounted to only 70 percent of a projection issued in FY1987). The project was also described as having met its objectives with respect to fostering economic development and improved living standards; following project implementation, the area doubled its population to 2600 and demonstrated steady gains in social infrastructure, notably with the construction of a new obstetrics clinic and community health center.

The Mauritanian project was designed to furnish fishing vessels, diesel outboard motors, fishing nets, and water wagons, and to set up and manage a fund for the promotion of small-scale fishery operations with income derived from sales of fishing nets and other productive equipment to local fishing households. It was driven by three objectives in particular: (a) support for commercial fishery operations; (b) improved income levels, standards of living, and employment opportunities for fishing households; and (c) increases in the food supply for the Mauritanian population at large. The evaluation found that the supplied equipment and materials were being utilized in a productive manner, and that gray mullet and other lucratively priced products accounted for an increasing share of the fishery merchandise placed on the market, thus suggesting that the project had met the first two objectives listed above. Conversely, although it had also contributed to the third objective, namely, an increased food supply for the national population, it had not measurably improved the food supply for local citizens because, as the evaluation discovered, Mauritanian fishing boats were primarily after octopus for export and mullet roe and other products that would sell on the urban market.

Prof. Ohbayashi made a number of recommendations: in particular, that Japan should refrain from providing assistance that could in effect fuel population growth and a capacity for larger fishing hauls in the areas adjacent to Bandalgen National Park, a designated world heritage; step up assistance through coordination with other donors to help the Mauritanian government manage its resources; and strive to modulate the environmental impact posed by mid- and long-range projects for coastal development.*1

*1: As a result of considerations for the national park, in FY1998 a Project for Development of Small-scale Fishery Enterprises was implemented with cooperation from other donor countries following relocation of the project site. Further, the provision of patrol boats by Germany and the EU vastly improved the ability of the Mauritanian Ministry of Fisheries to enforce restriction on fishing activity inside the park zone.

v. Ecuador: Telecommunications Network Expansion Project, Katalama River Basin Irrigation Project, Project for Improvement and Expansion of Water Supply Service to South Quito

Two Keidanren personnel, Akinori Shimamoto, Director, International Relations Bureau and Masaru Hayakawa, Manager, Coordination Group, International Relations Bureau, were consigned to evaluate a series of economic infrastructure-related projects in Ecuador.

The Telecommunications Network Expansion Project was integrated into a 4-year program (1985 to 1988) formulated by the Ecuadorian government for the dissemination of telephone services, a sector in which Ecuador happened to be the most-backward of any Latin American country. It was pointed out that the project took several years until its completion in October 1993 due partly to the economic setbacks stemming from a major earthquake, and partly to project consulting contract revisions following a change of government.

Nonetheless, the newly installed phone infrastructure has earned high marks for its performance. Also, the phone penetration rate climbed from under four to about six units per 100 population while the project was in effect.

Improved food self-sufficiency has been a challenge for Ecuador. The Katalama River Basin Irrigation Project was drawn up to add 6450 ha in newly cultivable farmland, foster increased yields of rice, soybeans, and maize, and to help stabilize farm incomes and promote local economic development. However, following a recent change of government administrations, the responsibilities for project implementation were assigned to a different agency and details of the project itself underwent various revisions. Additionally, contract-bidding-related legal disputes between local and Brazilian contractors effectively delayed the start of project construction work. During the 15 months that elapsed from the project start to the evaluation phase (August 1997), only 10 percent of the construction work had been completed. Irrigation water management will emerge as another issue once the project is finished and irrigation facilities are placed into

operation. The evaluation team noted that it may be necessary during the construction phase to promote the idea of collecting a management fee from farmers.

The Project for Improvement and Expansion of Water Supply Service to South Quito was aimed at extending water supply infrastructure to as-yet unserved southern districts of the capital city, Quito, and alleviating water supply problems in other districts already receiving service. All project work went smoothly from the preliminary survey stage to the start of construction. The Japanese and Ecuadorian phases of the project completed in February and March 1998, respectively.

With regard to future ODA for Ecuador, the evaluation team recommended (a) that Japan find projects capable of effectively harnessing limited human resources while drawing on channels of public-private collaboration and cooperation with multiple specialists; (b) that in the context of future energy and food problems, bear in mind that Ecuador is an ODA recipient country on the Pacific Rim; and (c) that environmental protection (mangrove forest preservation) be considered a field for heightened aid.

vi. Bolivia: Santa Cruz General Hospital, Santa Cruz Health and Medical Care Delivery System, Santa Cruz General Hospital Construction Project

Dr. Yoshikiyo Amaki, Chairman of the Japan Society of Anesthesiology and Professor of Anesthesiology at Jikei University School of Medicine (in Tokyo), was commissioned to evaluate an ODA project comprising assistance to Santa Cruz General Hospital, the core medical institution in Bolivia.

In his evaluation, Amaki noted that in view of Santa Cruz Hospital's central position in the Santa Cruz health-care system, building the hospital was appropriate as an initial project objective. The outpatient center, operating rooms, kitchens, examination rooms, and other facilities exhibited little or no signs of wear and were fully operational. In addition, the evaluation concluded that the selection of durable, easily maintained medical equipment was the right decision, and rated about 90 percent of the hospital's equipment operational. Owing largely to the hospital's efforts, from 1994 to 1997 additional project benefits emerged as tangible declines in the infant mortality rate, from 114 to 70 (per 1000), and in the maternal mortality rate, from 48 to 35 (per 1000).

A hearing at Santa General Hospital.

However, in terms of self-reliant operations and advancement, the hospital had not yet achieved high clinical levels in every respect. Assuming it would be a future goal to enhance the hospital's capacity for the provision of emergency care, intensive care, cardiac surgery, and other forms of tertiary care, continued logistics support would be necessary. As one idea, it was proposed that a cooperative system be devised by building additional hospitals for primary care with grassroots grant aid, thus allowing Santa Cruz General Hospital to concentrate its operations in the sophisticated arena of secondary and tertiary care.

It was also recommended that MoFA explore the option of establishing a center for medical equipment maintenance and strive to deal with various Bolivia-specific problems, particularly the issues of employee strikes, doctors' salaries, and consolidation of the city and national systems for monitoring and directing hospital operations.

vii. Micronesia: Project for the Improvement of Pohnpei Artisanal Fisheries Plant, Project for Upgrading Electric Utilities, Project for Improvement of Artisanal Fisheries in Chuuk State, Weno Harbor Extension Project

Prof. Yasushi Kikuchi of Waseda University was commissioned to evaluate four aid projects in Micronesia.

His evaluation of the Project for the Improvement of Pohnpei Artisanal Fisheries Support Station noted that the provision of ice machines had bolstered local awareness of the value of refrigerated storage and preservation not only of fishery products, but of most food products in general. Several problems were also cited, however, including a lack of transparency regarding ice supply expenditures, and the fact that ice trucks were not being suitably maintained or utilized.

Another Pohnpei venture, the Project for Upgrading Electric Utilities , involved the construction of a 5 megawatt power station and associated power-grid infrastructure. This project was credited for providing electricity to 3610 households—almost all the households in Pohnpei State. Noting the current reliance on foreign engineers for station maintenance, the evaluation stressed a need for the training of local electric engineers and maintenance personnel. Snags in the collection of electric utility bills were attributed to local cultural differences.

The Project for improvement of Artisanal Fisheries in Chuuk State supplied ice machines and refrigerators. However, as was also witnessed in Pohnpei State, the provision of ice benefited not only the fishery industry but practically all segments of the local population. However, due to limitations in the supply of fresh water and the lack of transformer units, it is not currently possible to run two ice machines at the same time.

The evaluation of the Weno Harbor Extension Project noted that harbor extension work alone would not be enough to fully harness the harbor's capacity, and in that context underscored the need for work to develop electric power, roadways, and other elements of basic infrastructure in the surrounding area.

From the vantage point of developmental anthropology, a subject in which Prof. Kikuchi specializes, the provision of aid for social and economic development in regions such as Micronesia, where the influences of intrinsic culture remain strong, will demand the formulation of projects that devote full attention to local cultural features and traditions. It was pointed out that for this reason, having experts on the recipient region participate from the project formulation stage will be important.

1.7 Evaluations by Foreign Experts: Water Supply and Sewer System Upgrading in Monib, Giza City (Phase 2)

The South Giza Water Treatment Plant.

MoFA commissioned Jacques Toulemonde, a renowned European expert on evaluation methods, to evaluate the Second-Stage Project for Improvement of Water Supply and Sewage Infrastructure in the Monib District of Giza, a venture designed to improve public hygiene in the greater Cairo metropolitan area. In particular, the project involved pipe-laying work, water pumping station construction, and the expansion of the South Giza Water Treatment Plant in Monib, one of the poorest districts in the greater Cairo area.

At one time, only half the local population had access to safe drinking water. However, the project resulted in a steady per-capita water supply of 130 liters to 200,000 citizens—practically every household in the area. Further, with the installation of sewer pipes, city streets were no longer

contaminated by polluted water; this was a significant improvement in the residential environment, particularly for women and children.

Toulemonde considered the project a resounding success in terms of effectiveness. He also noted that the facilities were being well-maintained more than one year after the startup of operations, and concluded that the project would be strongly self-supporting because of the collection of household utility fees proportional to the amount of water used.