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# LIVELIHOOD AND INCOME FROM THE ENVIRONMENT IN SINAI

FINAL PROJECT REPORT 2008-2012



**April 2012**

This report was produced for review by the United States Agency for International Development (USAID). It was prepared by International Resources Group (IRG).

**COVER PHOTO:** A Vocational-Training Participant Practices Checking the Alignment of a Building; Children from Monbateh Village in Central Sinai Touch Clean Water from a Desalination Plant; A Handicraft Trainer in Nekhl Demonstrates Sewing Traditional Bedouin Embroidery onto a Purse; A New Bus Service in Arish Transports Residents from Remote Areas to Work and School; A Drip Irrigation Network Improves Olive Cultivation in Sadr El Hetan.

*Photos by Ahmed Waheed and Dr. Khaled Kheir El-Din*

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# ACRONYMS

IRG	International Resources Group, (a Washington D.C.-based professional services firm, prime contractor for LIFE Sinai)
LIFE	Livelihood and Income from the Environment Program
NGO	Non-governmental organization
NSSCWW	North and South Sinai Company for Water and Wastewater
USAID	United States Agency for International Development
YMWA	Young Muslim Women’s Association



# EXECUTIVE SUMMARY

The Livelihood and Income from the Environment in Sinai (LIFE Sinai) Project was a three-and-a-half year project aimed at improving sustainable community development among the largely Bedouin population of Central Sinai, which is part of the North Sinai Governorate. The project had 11 tasks ranging from physical infrastructure and equipment to community and institutional development, vocational training, and small business development. Funded by the United States Agency for International Development (USAID), the project was implemented by International Resources Group (IRG) with two Egyptian subcontractors and associated Egyptian consultants.

The project overcame difficulties including security concerns and the Governorate administration's limited familiarity with USAID projects. Over time, the project team developed a collaborative and productive relationship with Governorate officials and Bedouin community leaders. LIFE Sinai achieved the following results during the life of the project.

## 1. Increased Access to Safe Drinking Water

- **Desalination Plants** – With shallow wells drying up, Bedouins' health is threatened by the distance to reliable water sources. LIFE Sinai constructed three plants in Meswateya, Monbateh, and Bir Beda villages in Hassana district to remove salt and impurities from deep sources of brackish groundwater. At project's end, the plants together were providing 220,000 liters (58,000 gallons) daily of clean water for nearly 8,000 residents, exceeding the project target. Residents said their publicly provided water had doubled to quadrupled, allowing improved health and hygiene and reducing costs of private water delivery.
- **Water Delivery and Access Roads** – The underdevelopment of transportation is a major impediment to delivering water to residents. LIFE Sinai and the water company co-funded a vehicle overhaul that put six more trucks into service. The project also built access roads to each desalination plant for use by public and private trucks and residents.

## 2. Improved Transportation for Remote Communities

- **Public Transportation** – A lack of public transportation severely hindered access to livelihood opportunities, health care, and education. The project helped the Governorate initiate a bus service, purchasing nine buses and a service vehicle and providing training, technical assistance, and initial financial support. Three intercity routes started operation in March 2010 and were soon carrying an average of 6,000 riders per month (more than 70,000 per year) across Central Sinai on a sustainable basis. More passengers benefit from three routes circulating within the city of Arish. The service created 32 jobs, including bus drivers, ticket-takers, security, mechanics, and managers.
- **Road-Clearing Equipment** – Drifting sands frequently make desert roads impassable, leaving settlements cut off from services including water delivery. Such closures could last for as long as

two weeks because local governments in Central Sinai lacked the necessary equipment to clear the roads. LIFE Sinai purchased four front-end loaders for Hassana and Nekhl districts, resulting in quicker road-clearing.

### **3. Agricultural Support**

The project introduced modern techniques to farmers in the high-potential olive sector. LIFE Sinai trained 52 farmers in Quseima in cultivation, pruning, and using plant-growth regulators; extended a water-conserving drip irrigation network near Sadr El Hetan benefiting 15 farming households; and purchased two tractors and equipment.

### **4. Economic Opportunities**

LIFE Sinai's economic development activities encouraged local small business and entrepreneurship as well as provided individuals with market-relevant skills. More than 228 residents gained new skills, thus increasing their economic opportunities.

- **Women's Handicrafts** – Thirty women who completed training in traditional sewing and embroidery were given equipment and assistance to market their work together as a business named "Sinai Nekhl Desert Handicrafts." At the end of the project, 15 women had received orders for products through the new marketing collective.
- **Vocational Training** – The program provided youths with high-value job skills. Of 12 residents trained in mobile phone repair and maintenance, six went on to open three repair workshops, doubling their monthly income. Among the 27 trained in carpentry, building, and electrical work, one in three graduates said they applied their new skills within two months on home improvements in their communities. Of 20 trained in building and operating desalination plants, seven were hired by the water company to work as technicians or guards.
- **English Language** – Training for 28 youths in English plus teamwork and presentation skills was implemented through a contract with Amideast. Pre- and post-tests indicated all but two students improved their ability to use English for communication.



*Youth in Monbateh village, Central Sinai, wait with plastic canisters for the delivery of water by truck*

## BACKGROUND

The Bedouin communities of the Central Sinai region are overwhelmingly rural and characterized by extreme poverty, poor health, widespread illiteracy and a low level of social and economic integration with the rest of Egypt. The vast majority of the Central Sinai population works in the informal sector, including barter and subsistence agriculture, which is limited by worsening water scarcity. Public services are lacking and difficult to provide because of the dispersal of the population.

USAID, in partnership with the Government of Egypt, sought to address basic needs and improve livelihoods for these low-income communities on a sustainable basis while preserving their cultural heritage. USAID in 2004 had initiated the program Livelihood and Income from the Environment – LIFE – to help economically depressed communities in Egypt realize increased employment, greater economic development, and better living conditions through improved environmental services. The

difficult economic conditions of the Bedouin of Central Sinai are aggravated by the environmental phenomenon of water scarcity. Therefore, USAID and the Government of Egypt agreed in 2007 to expand the LIFE Program to include a new project, **LIFE Sinai**, with technical assistance from International Resources Group. The objectives of LIFE Sinai were:

- To respond to the challenges facing the traditional Bedouin lifestyle due to scarcity of water and access to economic means, and
- To help develop local capacity to undertake community development initiatives that reflects the needs and aspirations of local communities.

Starting in September 2008, LIFE Sinai was historically significant in several respects. The project saw USAID cooperating directly with a provincial government (North Sinai Governorate) and tribal leaders rather than with a central-level ministry. The project continued despite security concerns and political tension that intensified with the Egyptian uprising of January and February 2011 and the ensuing diminution of central control. Symbolically, the project's events provided a prominent demonstration of American-Egyptian cooperation in support of the Bedouin people.

The project promoted sustainable development with a combination of physical infrastructural improvements and livelihood-enhancing activities. Specific activities built on the natural strengths of Central Sinai, such as olive production and traditional handicrafts, while addressing priorities identified through group discussions in 20 Bedouin communities, such as safe drinking water, affordable transportation, and marketable employment skills.

Overcoming the challenges of insecurity and geographical dislocation, by the project's completion in March 2012, LIFE Sinai had succeeded in increasing the supply of water and transportation to the remote Bedouin communities, introducing modern agricultural practices, and increasing greater economic opportunity for hundreds of residents and their families.

# THE APPROACH

To promote economic opportunity and community development, the LIFE Sinai project focused on interventions that could advance local livelihoods and quality of life through the improvement of water quality and distribution, upgrades to public transportation, providing marketable job skills and nurturing entrepreneurship, and building community institutional capacities.

From the start, LIFE Sinai took a participatory approach, seeking the input of the Bedouin communities as equal partners, endeavoring to respect local cultural norms, and consulting regularly with governorate-level officials. To engage local residents in identifying their priority needs, LIFE Sinai conducted a community needs assessment in mid-2009 that included 40 focus group discussions in 20 communities of differing tribal affiliations, in-depth interviews with village leaders and residents, and direct observation of conditions in the communities. The LIFE Sinai project team contracted with Sinai University, based in the governorate capital of Arish, to carry out the surveys and thus gained a valuable measure of trust, as some of the students were Bedouins from Central Sinai communities and some university staff had previously carried out field studies in the region.

The community needs assessment confirmed a widespread lack of public services, including in health, education, electricity, water, sanitation, and transportation. Under the traditional Bedouin clan structure, settlements are small and widely scattered, such that providing all these services to each village or even clusters of villages would be impractical.

The dispersal is aggravated by the difficulty of severe desert conditions. Finding sufficient skilled personnel to staff public services is also difficult, because Bedouin who gain skills often choose to leave the harsh surroundings, and workers from elsewhere in Egypt are difficult to attract.



*A focus group discussion in the village of Reed for the community needs assessment. An equal number of focus groups of men and women were held. Grouped by clan, Bedouin settlements are often small, like the one below.*



Based upon the expressed priorities of the community members and analysis of public statistics and development studies, the community needs assessment concluded that the first priority problems of Central Sinai were water scarcity, food shortages related in part to low agricultural production, and geographic isolation. To respond to these needs, the project team consulted with technical staff in the North Sinai Governorate Administration and proposed a set of potential physical improvements and livelihood-oriented training programs.

The LIFE Sinai Team and consultants carried out extensive consultations with community leaders in order to answer any questions and to solicit their input into the design, implementation, and timing of activities, especially agricultural interventions and the location of the desalination plants. The project formed working groups by topic composed of staff from the project and the Governorate, local non-governmental organizations (NGOs) and community members. After training in development planning and performance monitoring, the work groups monitored the implementation of activities and in some cases participated in them. Through this process, the LIFE Sinai Team gradually built up a relationship of trust with the Governorate. The LIFE Sinai Team also met frequently with the Governor or the



*North Sinai Governorate Secretary-General Gaber El-Araby, left, and a handicrafts trainer talk with LIFE Sinai Chief of Party Greg Olson.*

Governorate Secretary-General who manages day-to-day administration of the Governorate to maintain communication about the progress in the project and to overcome administrative and financial bottlenecks. The project consulted with the North and South Sinai Company for Water and Wastewater (NSSCWW) on the working group on water issues and while reviewing bids. As the plants approached completion, the project instituted regular weekly meetings with the heads of the water distribution unit in Arish and Central Sinai. When the plants began operation, the project interacted with water company staff daily and provided them with on-the-job training. The project maintained contact with the chair of the water company on milestones such as the signing of agreements and transfers.

The project conducted several technical studies to inform the design of the interventions. These included a traffic survey and user profile for the public transportation service; extensive groundwater testing and hydrological research for the design of the desalination plants and the type of filter required at each site; and studies for the design of livelihood trainings and agriculture activities. In compliance with USAID environmental procedures, the project team undertook a programmatic environmental assessment from mid-2009 to January 2010. This research benefited greatly from past USAID studies of the geology, hydrology, ecosystems, and land tenure of Sinai, with additional and updated informed from the LIFE Sinai team. Notably, the assessment identified a concern about the disposal of a byproduct of desalination – brine waste. To prevent the brine from re-entering the groundwater, the project team recommended evaporating the brine in a lined basin and then disposing of the salts; this solution was

implemented by the LIFE Sinai project team and the desalination contractor and monitored by the construction contractor.

The principal activities of LIFE Sinai can be grouped in two categories: Community Service Interventions, including construction and implementation of physical interventions; and Livelihood and Income Interventions, which includes skills training, small business development, and agriculture improvements.

# COMMUNITY SERVICE INTERVENTIONS

The North Sinai Governorate Administration requested that more than half of the project budget be devoted to the physical improvements such as the construction of infrastructure and purchase of equipment. Improvements were selected based on the findings on the community needs assessment, cost, environmental impact, and the expected sustainability of the improvements. Technical specifications were developed by LIFE Sinai staff, consultants, governorate technical staff and, for the agricultural procurements, Central Sinai residents. All were submitted to competitive bidding. The following physical interventions were implemented during the life of the project.

## PUBLIC TRANSPORTATION SYSTEM

The community needs assessment identified the geographic isolation of communities as one of the predominant obstacles to improvement of livelihoods and income in Central Sinai. The lack of public transportation severely hinders access to employment and livelihood opportunities, and it curtails utilization of community services such as health care and education.

After consultation with North Sinai Governorate on priorities, the LIFE Sinai Program procured nine buses and a service vehicle for the governorate. Service began in late March 2010. The buses are used for three routes to population centers in Central Sinai (Gefgafa, Quseima, and Nekhl) and three routes within the city. LIFE Sinai trained 27 residents as bus drivers, conductors, and technicians. The project provided technical assistance on operation and maintenance, as well as initial financial support. Within a year, the service was operating on a sustainable basis.



*Nine buses garaged in Arish city for the new public transit service funded through LIFE Sinai.*

Initial ridership was high, with an average of 228 riders per day and 6,000 per month, which projects to an estimated 71,000 per year including seasonal variance. The service is used heavily by teachers, accounting for 33 percent of riders; employees, 29 percent; and students, 7 percent. Residents have a high sense of ownership, and community leaders have continually praised the service. Sheikh Moussa of Gebel Maghara region said the bus service was one of the most important and visible contributions that LIFE Sinai made to the community, “because it has helped relieve the isolation of the area.”

The bus fleet represents North Sinai Governorate’s first public transportation source and the first affordably priced inter-city transportation; some private transportation contractors have responded by making their fares more affordable.

## WATER DESALINATION PLANTS



*Left, children from the Bedouin community of Monbateh wash their hands with water from a desalination plant built during LIFE Sinai. Right, Bedouin leaders such as Sheikh Goma'a of Monbateh were full partners in the project.*

The largest component of the LIFE Sinai Program addressed the vital need of potable water. After many years of drought and population growth in Central Sinai, many shallow wells have run dry. The North and South Sinai Company for Water and Wastewater, a public-private utility, provides drinking water at no cost, but its resources are constrained by the great distances from existing water treatment plants to serve remote communities. A survey by the project found that residents received as little as 6 liters per person per day before the LIFE Sinai intervention.

In addition to the health problems related to low hydration, a lack of water for cleaning food is linked to a high incidence of diarrheal disease in Central Sinai, and drinking untreated well water leads to disorders of the kidney. Remote Bedouin households thus found themselves obliged to supplement what the water company supplies by paying private truck drivers at high cost to bring water great distance, an expense that reduced their ability to cover other household needs.

The Egypt Ministry of Water Resources and Irrigation had dug deep wells at Meswateya, Monbateh, and Bir Beda, all in Hassana district. But the brackish water they produced contained high concentrations of

minerals and solids and was suitable only for agricultural cultivation, not for human consumption. Following detailed planning and feasibility studies, LIFE Sinai contracted with an Egyptian company, Middle East Water and Wastewater, to construct desalination plants adjacent to the deep wells. Completing the plants required a year of intensive logistical coordination and construction efforts, often hampered by the country's political unrest and as periodic local conflicts. The project team overcame those challenges in part because of the project's participatory approach. The project involved community members in laying the plants' foundations and trained them in how to operate and maintain the plants. During construction, the project held regular meetings with community leadership to discuss emerging issues.

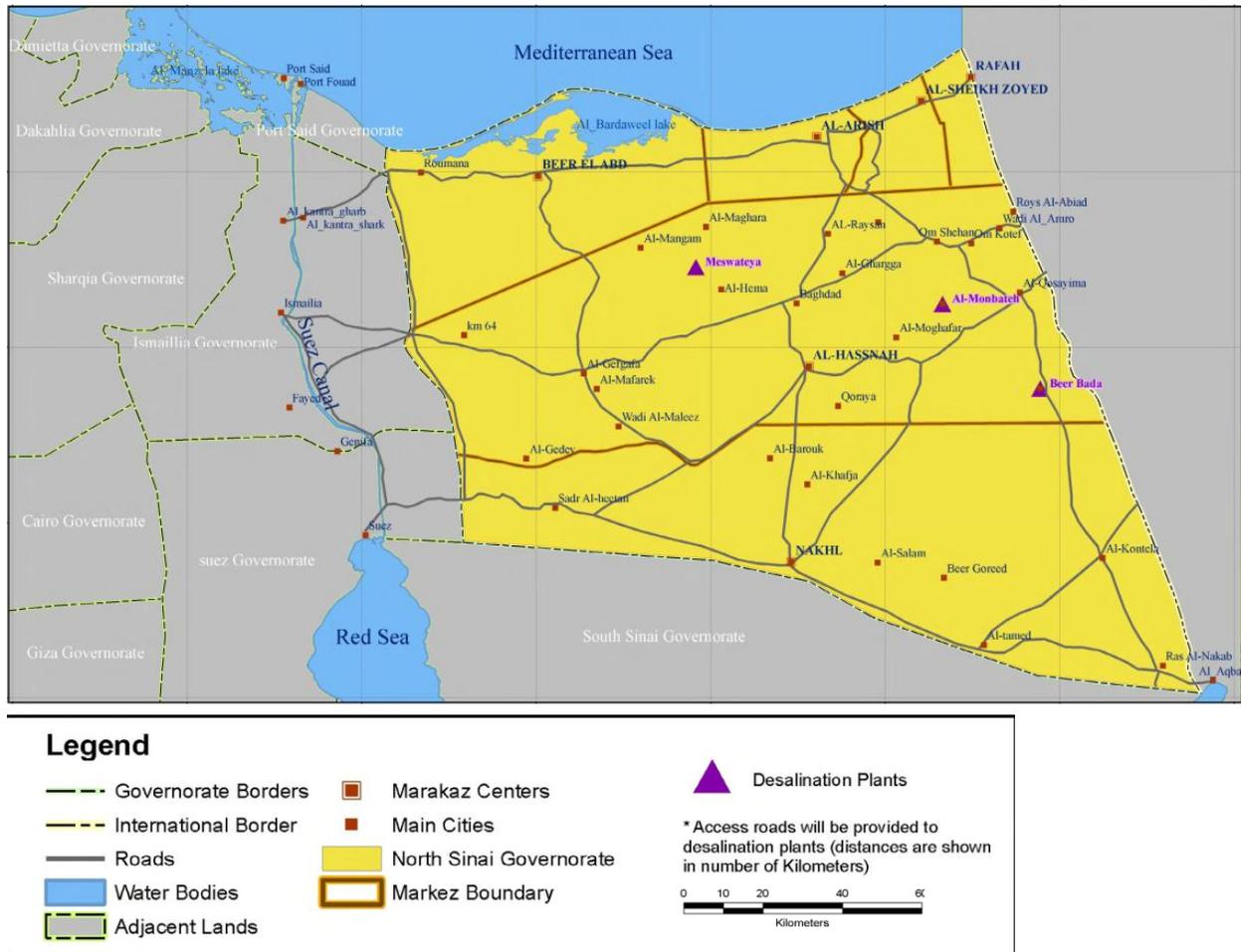
All three plants began operation in August 2011. Using a process compliant with the standards of the World Health Organization, Egyptian law, and U.S. environmental regulations, the plants treat and filter the deep well water in multiple stages to remove sodium, iron, manganese, dust, and suspended solids. LIFE Sinai built access roads to each plant and upgraded the local electrical system at Monbateh to provide enough power for the plant, which also stabilized power for the surrounding village. At the water company's request, the project co-funded major repairs of water trucks that put six more trucks into service. After three months of testing water quality and training, the three plants were transferred to the water company.

At project's end, the Monbateh plant was operating at 60 percent of capacity, and the plants at Bir Beda and Meswateya were operating at up to 30 percent capacity, together providing 220,000 liters (58,000 gallons) daily of clean drinking water for nearly 8,000 residents. Output can be raised by increasing the amount of time that the plants are operated per day.



*At right, water from a well prior to desalinization; at left, desalinated, drinkable water.*

## Location of the Desalination Plants



Before, a water truck had to travel up to 80 km (50 miles) across hilly areas with poor roads to distribute a single tank of water to Central Sinai communities. After the opening of the three desalination plants, those communities are all within a few kilometers of a plant, so a water truck can refill quickly and deliver more water to more households in less time. Residents can fill their own containers as a free service.

Compared to 6 liters per person per day before the intervention, a follow-up survey found the water company was able to supply water at the rate of 12 to 24 liters per person per day on average in the surveyed group as a result of the establishment of the desalination plants. Almost all respondents interviewed expressed their satisfaction with the increased availability of water. One resident commented, “Now, I have water every day.” Another said, “I don’t have to worry about water anymore,” while another said, “Finally, my household will be provided with clean water regularly.”

*“We trust the desalinated water. It is pure and safe, and it tastes just like bottled water.”*

Mahmoud El Gharabawy,  
head of Monbateh village

*“Now we take showers more often than we ever used to.”*

Gomaa Soliman,  
resident of Meswateya settlement



*Above, the project trained local Bedouin residents in operation and maintenance of the desalination plants.*

*At right, a truck driver fills his water tank at the Monbateh desalination plant.*



## ROAD MAINTENANCE EQUIPMENT

Many of the major roads in Central Sinai are subject to periodic closure due to sand drifts. This problem is especially prevalent in eastern and central sectors of the region. North Sinai Governorate previously had no functioning road maintenance equipment; it had to rely upon voluntary assistance from private contractors to clear the roads. It was not uncommon for a major artery to be closed for up to two weeks before a sand drift eventually is removed.

During these periods, many essential services, such as potable water delivery, are not provided to the more isolated settlements.

As one of its priorities, North Sinai Governorate requested the provision of road maintenance equipment for sand drift removal. Strategic planning sessions identified front-end loader vehicles as the most essential equipment.

The project procured four Caterpillar loaders and presented them to local officials in December 2011. Two of these are based in Hassana to maintain the roads to Quseima and Gefgafa. The other two are based in Nekhl, maintaining roads to Sadr El Hetan and Temed.



The LIFE Sinai partners present road-clearing equipment to local officials in Hassana and Nekhl to combat chronic road closures due to blowing sand.

## AGRICULTURAL EQUIPMENT

At the request of North Sinai Governorate, LIFE Sinai provided Nekhl and Hassana districts each with a tractor equipped with a plow for preparing farmland, a tank for removal of municipal wastewater, and a tipping trailer for removal of garbage and debris. The tractors, capable of serving about 10,000 inhabitants, will encourage new land cultivation, increase harvests, and improve the provision of waste disposal.

# LIVELIHOOD AND INCOME INTERVENTIONS

In aiming to strengthen livelihoods in Central Sinai, LIFE Sinai strategically selected skill areas with a high potential for generating income based upon real assets and opportunities. The project provided vocational training for 228 residents to prepare them for improved employment or to develop their own small businesses. Skills included olive cultivation, the building trades, English language, and professional work skills. Of the 30 women trained to produce and market handicrafts, 15 had received orders by project’s end. Of the 12 residents trained in mobile-phone repair, six went on to open three repair workshops showing an immediate positive impact on entrepreneurship. In addition, LIFE Sinai’s physical interventions led to increased temporary and permanent wage employment in the bus service and at the desalination plants.

## WOMEN’S HANDICRAFTS PROGRAM



*At left, a trainer (center) in LIFE Sinai’s handicraft training program works with two women from Nekhl in practicing sewing goods for sale such as the patterns displayed at right*

Like olive trees, the Bedouins’ strikingly beautiful traditional embroidered designs were seen as a natural asset of Central Sinai. Therefore, LIFE Sinai sought to build upon the potential of women in Nekhl to produce handicrafts as a sustainable source of income for their families and so improve their living conditions. The project worked with the NGO Woman’s Association of Nekhl to select 30 women for intensive training and coaching. LIFE provided skilled instructors in sewing and embroidery to enable the women to upgrade their existing skills, including making patterns, sewing with various kinds of fabrics, and tailoring techniques for clothes, bags, and accessories.

To have a product that is relevant and competitive, trainees were introduced to international quality standards for handicrafts. To that end, in December 2010, all trainees completed workshops on product



design and trends, costing and pricing, quality assurance, marketing and sales, and participating in trade fairs. Then they split into four groups specialized in, respectively, purchasing and manufacturing, costing and pricing, quality control, and marketing and sales, and each group received training tailored to its area of specialization in January 2011. In April 2011, the group practiced turning a new design from concept to product. In May 2011, selected trainees from each group visited markets for fabric and other raw materials as well as large textile product sellers. In September 2011, all trainees completed a workshop on calculating final costs and sales prices. The LIFE Sinai project provided modern machinery, equipment, and raw materials.

The trainees adopted the brand name Sinai Nekhl Desert Handicrafts for their future product line. At the end of 2011, LIFE Sinai provided the group with a set of marketing materials including catalog, product tags and business cards. LIFE Sinai arranged for the Young Muslim Women's Association (YMWA) of Arish to provide support in marketing and ongoing training such as a refresher course in January 2012 focusing how the women could apply their skills toward products expected to be ordered. The YMWA also agreed to house a workshop for producing the group's goods. At project's end, the new venture had received orders that kept 15 women busy.

## VOCATIONAL TRAINING



*A trainee in the building component measures a wall's alignment.*



*Trainees practice chiseling during the component on electricity, building, and carpentry.*

A lack of economic opportunities puts pressure on Bedouin tribal communities in Central Sinai. Young men from Egypt's remote Central Sinai struggle to find regular employment, even after taking post-secondary technical training. LIFE Sinai strategically selected training programs that would impart market-relevant skills in actual demand.

**Building, Carpentry, and Electricity** – Vocational training programs often were not aligned with actual job opportunities in the area, so many young graduates are trained but remain unemployed, or must move to faraway cities to find work. LIFE Sinai and North Sinai Governorate worked with the governmental Institute of Building and Construction in Arish to identify skill sets that would help the young people land opportunities actually existing in Central Sinai. They selected building trades that, while improving residents' prospects for income generation in the long term, also provide immediate benefits to the remote communities that are in need of skilled services.

With Bedouin leaders, the LIFE Sinai program recruited 27 young men to take training from July to September 2011. LIFE Sinai negotiated free tuition for the participants and covered their other expenses during training. Eleven of the participants were trained in household electricity, eight in carpentry, and eight in building with concrete, brick, mortar, and rebar. At a graduation ceremony, the program presented each graduate with a tool kit containing the tools they learned to use during the training program, allowing them to apply their new skills while underscoring job-readiness.

One out of three graduates surveyed two months later said they already had been able to apply their new skills doing home improvements in their communities. "The training I received was useful and very good," said Abdul Rahman Suleiman Eid, of Hassana. Two graduates have plans to start their own businesses. "I plan to open a shop where I can sell finished windows and doors and do the installation and repair work at the same time, so people will know me," said Bassem Hussein Oda Salem, of Quseima.

**On-the-job Training in Building** – Through the LIFE Sinai project, USAID and Egypt's North Sinai Governorate addressed multiple needs of low-income Bedouin communities including improved access to potable water and increased economic opportunities. One component addressed both those needs at the same time. While constructing water-desalination plants, LIFE Sinai cooperated with municipal councils to recruit a group of Bedouin men who worked alongside the construction contractor from December 2010 to July 2011 and received on-the-job training in basic construction, including foundation, masonry, electrical, and painting. They also strengthened "soft skills" such as punctuality and cooperation.



*Moussa Ali Sabah learns carpentry during construction of a water desalination plant.*

Six residents completed the on-the-job training; two of them received additional training and temporary jobs from the contractor, and one of them was hired by the local utility that assumed maintenance of the desalination plants. All of the trainees received a tool kit from the program to help them apply their newly acquired skills. “They are fast learners,” said the training supervisor, Sayed El-Shehiny, adding. “By getting this training, LIFE Sinai has offered them a good chance in gaining new jobs and earning money.”



*Bedouin residents who completed on-the-job training in construction also were given a complimentary tool set.*

Moussa Ali Sabah, age 30, from Monbateh, was a skilled painter but had struggled to find enough work in the sparsely populated community to support his wife, son, and daughter. After gaining new skills from the training, Sabah started a contracting business in his village and has been able to find more opportunities for work.

**Mobile Phone Repair and Maintenance** – LIFE Sinai planners noted that mobile telephones are popular among residents but that their communities had few of the mobile phone repair workshops that are common in Egypt’s larger cities. The skills of maintaining and fixing mobiles can be taught in a relatively short time, and the necessary equipment is low in cost. So LIFE Sinai worked with community leaders to recruit young men from Central Sinai to receive practical, hands-on experience in mobile phone repair and maintenance during a one-month program at Smouha Academy in Port Said.



*Sa’ad Hamdy sits in his new workshop with tools and equipment provided with his training on mobile phone repair and maintenance.*

Twelve trainees received certificates of completion. Six top-ranked students received an additional two weeks of on-the-job training in the academy’s workshop under the supervision of an experienced technician to practice repairs, recordkeeping, and soft skills such as dealing with customers. These six joined together to establish three repair workshops in the towns of Hassana and Nekhl, including Sa’ad Hamdy. LIFE Sinai presented each workshop with a set of tools and equipment for hardware and software repair and maintenance to enable them to apply the acquired skills while embarking on their new enterprises. “Opening a shop is something I could never have done without the training program and tool kit,”

Hamdy said. Hamdy and his partner are seeking to be named authorized dealers for one of Egypt's leading mobile service providers.

The new entrepreneurs reported that offering repair services had doubled or more than doubled their monthly income, which they used to better support their families and grow their businesses.

## ENGLISH LANGUAGE TRAINING

Promising students from disadvantaged backgrounds were selected for a 360-hour course to study English, learn about American culture and values, and develop important skills that will benefit them academically and, in the future, professionally. The English Access Microscholarship Program implemented by Amideast ran from June 2010 until graduation in July 2011.

Instructors and students delved into English language instruction, presentation and team-building skills, and community engagement, often working in co-ed small groups. Students held class elections and volunteered at an orphanage, an exercise in civic engagement no student had done before. At the



*Aliaa (left) and her classmate Hasnaa celebrate graduation.*

graduation ceremony in July 2011, attended by the governorate's Secretary General Gaber El-Araby, students combined their English and civics lessons in a play recounting the momentous events of the January 25 revolution in Tahrir Square.

One of the students was Aliaa Al-Sharif, 16. Despite her strong academic record, she would have been ill-prepared for university because she had never attended an English class before nor attended class with boys. Having never had an educational environment that promoted confidence and community engagement, she was shy and unassertive. After the Access program, Aliaa said she had gained knowledge and confidence. "The teachers were excellent and they explained the

subject matter very well. I learned many new things I didn't know before," Aliaa said. "I used to be very shy, but now I feel more independent and ready to express myself and defend my ideas." Pre- and post-tests indicated all but two students improved their ability to use English for communication.

## AGRICULTURAL SECTOR IMPROVEMENT



*A drip irrigation system in Sadr El Hetan provided by LIFE Sinai.*

Olive cultivation holds a high potential for economic development for Sinai but is limited by water scarcity and a lack of modern techniques. Although security concerns constrained the project's ability to hold activities in the field, LIFE Sinai completed two activities to strengthen olive cultivation.

An analysis of the olive value chain conducted in mid-2009 recommended extending expertise to the farmers with field trainings. The analysis identified Quseima as a suitable area because of a concentration of olive farms and the presence of a community development association. LIFE Sinai began an extension activity in late 2009 but had to suspend it because of a dispute between two local Bedouin tribes. The activity resumed in November 2010 and provided instruction to 52 farmers – including five women – in cultivation, pruning, and the use of fertilizer and plant growth regulators. However, the Governorate asked that the activity be suspended in December 2010 because of tribal conflicts. The Egyptian revolution that began in January 2011 led to wider security concerns, and the activity was cancelled. Nevertheless, the findings of the value chain analysis and the template for the training activity are of potential benefit to future development activities.

Subsequently, the project identified an opportunity to improve irrigation practices. In Sadr El Hetan village in Nekhl district, farmers were struggling to find soil humid enough to support olive trees. The Ministry of Water Resources and Irrigation had dug two deep wells years earlier at a distance from Sadr El-Hetan with pumps provided by the Swiss government. But in the absence of a pipe network, the wells were little-used for irrigation. At the request of the Governorate, LIFE Sinai in December 2011 extended a water-conserving “drip irrigation” network from the wells to areas favored by local farmers. Drip irrigation increases crop yield and quality while reducing runoff; the need for chemicals; and costs for water, energy, and labor. LIFE Sinai financed pumps, trained farmers in the use of the system, and provided each farmer with a set of hand tools for cultivation, including a wheelbarrow, rake, spade, and hoe. The improvements directly benefit 15 farmers and their families. The Governorate gave 30 feddans of land (about 31 acres) to the farmers, and the Ministry of Agriculture and Land Reclamation provided 3,000 seedling olive trees. The farmers began growing other vegetables next to the trees to supplement their income.



*Sadr El Hetan farmer Mohamed Selim adjusts an irrigation hose near an olive seedling. Below, a farmer with tools provided by LIFE Sinai.*

# CONCLUSIONS AND LESSONS LEARNED

This section discusses conclusions and lessons learned during the implementation of the LIFE Sinai project.

## LEVERAGING RESOURCES

Although the remote and lightly populated character of Central Sinai meant there were fewer potential partners for LIFE Sinai, the project nevertheless succeeded in building upon the current and past resources and efforts of other institutions. The desalination plants and Sadr El Hetan drip irrigation system all increased the utility of past investments (deep wells) of the Egyptian Ministry of Water Resources and Irrigation. The drip irrigation system also benefited from past aid from the Swiss Agency for Development and Cooperation, and North Sinai Governorate donated land and obtained seedlings from the Ministry of Agriculture and Land Reclamation. For the vocational training activity, training was provided by the governmental Institute of Building and Construction in Arish according to skill sets identified by LIFE Sinai and North Sinai Governorate. The project explored partnerships with private sector firms such as apprenticeships with mining and cement operations but encountered little interest. Perhaps the most successful example of the project leveraging existing resources was in engaging Sinai University in Arish to undertake surveys for the community needs assessment; this subcontract provided an invaluable grounding in local knowledge. In another synergy, IRG cooperation with the North Sinai Power Authority to increase the power supply for the Monbateh desalination plant also stabilized the previously erratic electrical service for Monbateh village.

## INSTITUTIONAL DEVELOPMENT

From its outset, the LIFE Sinai project team strengthened the ability of stakeholders in North Sinai Governorate to identify practical means of addressing development challenges, collaboratively. The process of compiling the community needs assessment (see Approach section) included a series of strategic planning workshops carried out with representatives from the local communities, including the NGOs Nekhl Desert Union Association and Woman's Association of Nekhl, the Governorate Administration, and Egyptian government officials. At the workshops, the project team facilitated the stakeholders in discussing the challenges identified in the needs assessment, diagramming the problems that contribute to those issues, articulating the desired objectives, and identifying activities that could advance toward those objectives.

Throughout the project's lifetime, the LIFE Sinai project team contributed greatly to the institutional development of the North Sinai Governorate Administration. Prior to LIFE Sinai, the Administration focused its efforts at social and economic development nearly exclusively on the governorate's northern coastal zone. During the course of the LIFE Sinai project, the project team worked closely with the Governorate Administration in Arish and District Heads in the Central Sinai districts of Hassana and

Nekhl exploring the needs and assets of the Bedouin communities. The main institutional vehicle for this collaboration was the Working Group. This process left the Governorate Administration not only with a more detailed and up-to-date understanding of the condition of the Bedouin communities but also with an increased understanding of USAID development practices and collaborative methods of planning and monitoring. The Working Group model reinforces norms such as transparency, good communications, and teamwork. Governorate staff commented on numerous occasions that they appreciated the collaborative model because it demonstrates that each partner respects the abilities and role of the other partner in development administration; they seemed disposed to use this model in the future. The same was true for staff at the district level, although there are fewer technical staff at that level of government. More broadly, the cooperation with LIFE Sinai strengthened the Governorate Administration staff's understanding of social and economic development, which will benefit the area long after the conclusion of the project.

Additionally, LIFE Sinai provided concerted technical and financial assistance to North Sinai Governorate as they learned how to operate public transit for the first time and until the service was operating sustainably. LIFE Sinai worked intensively with the water company to train its staff in operating and maintaining the desalination plants, as well as helping strategize sustainable operation and delivery. The project also worked with the Woman's Association of Nekhl intensively under the women's handicraft program, strengthening the NGO's capacity to market handicrafts and to train women in the same.

## **CHALLENGES**

The LIFE Sinai Project faced a number of serious challenges from the beginning of the project. Governorate officials had limited experience with USAID's approach to development as well as U.S. Government regulations governing foreign assistance. The target population of the project, the Bedouin communities of Central Sinai, is extremely poor, many unskilled and largely lacking civil society organizations with whom the project could work.

Moreover, North Sinai Governorate is a high-security region of Egypt, primarily because of its proximity to Gaza and Israel. From the start, the Governorate would allow only the Chief of Party and a few visiting Home Office staff to work in the territory of the governorate. This limited the project team's ability to, for instance, conduct household surveys and community level institutional assessments during the first year of the project. This meant reliance mainly on Egyptian staff. It would have been most desirable to have recruited staff locally. However, aside from a secretarial and housekeeping staff, it was difficult to find local individuals in Sinai sufficiently technically qualified and available for hire. This required hiring long-term Egyptian staff from Cairo, where the overwhelming majority of technically qualified individuals live. However, no Egyptian staff were willing to move their families to Arish for a three-year project and without reimbursement of relocation costs. As a result, it proved difficult to staff up the project. This difficulty was heightened by the negative perception of security of the governorate. Therefore, IRG shifted to implementing the project with just two of the Egyptian subcontractors: Nile Consultants, which handled all of the physical interventions, and Entrust, which handled the training and livelihoods related activities. The project team adapted its management and implementation approaches to respond to frequent changes in the Governorate's plans and priorities and to the political and security environment within which the project operated.

The Governorate had prepared a list of procurements prior to the start of the project that was actually more than the entire project budget and initially insisted that the project be limited to what was on the list. After a long series of negotiations between the LIFE Sinai team and USAID staff and the North Sinai Governorate, it was agreed that some high-priority items on the list would be implemented while the team would be able to carry out some surveys of Central Sinai communities.

Because of decisions of the North Sinai Governorate Administration based on their perceptions of the security situation, a number of the contracted tasks were either not permitted to be implemented or were extremely restricted in nature. The Governorate did not permit implementation of Task 5, Renewable Energy; and Task 6, Environmentally Sustainable Tourism Initiatives. Task 8, Fast Track Interventions, was to have been implemented at the start of the project but could not be due to the Team's lack of access to the Central Sinai region, so this task was folded into Task 4, Physical Interventions. Due to the lack civil society organizations or the limited capacity of the few that existed, Task 9, Community Development Grant Program was essentially repurposed into the Vocational Livelihoods, Handicrafts and English Language trainings.

## LESSONS LEARNED

### EMERGENCE OF A DEVELOPMENT PROJECT MODEL FOR CENTRAL SINAI

1. The LIFE Sinai project introduced to North Sinai Governorate the concept and experience of an integrated, multi-sector, donor-funded, development project. LIFE Sinai was a complex project in that it attempted to address the situation of the Bedouin population of Central Sinai from several different vantage points. It came at a time of high political sensitivity. Despite the lack of familiarity on the part of the administration of the governorate with USAID's development approach, and despite initial suspicion about the intentions of the project, LIFE Sinai nevertheless formed strong working relationships with the administration which, in the end, provided a model for future development projects in this governorate.

2. There is no doubt that the greatest difficulty in implementing the design of LIFE Sinai was addressing the “software” tasks, i.e. community institutional development, small business development, and addressing Bedouin skills development needs. On the other hand, implementing the “hardware” tasks, i.e. the



*From right, USAID's Mohamed Abdel-Rahman, North Sinai Governor Sayed Abdel Wahab Mabrouk, and Bedouin leader Sheikh Salman Farag open a LIFE Sinai-funded desalination plant in Bir Beda.*

physical interventions, while not easy, was much more straightforward and provided easily visible results to the North Sinai Governorate Administration and the population benefitting from them. Moreover, given the depth of poverty and low quality of life of the Central Sinai residents, the physical interventions are likely to have a more immediate positive development impact so long as the longstanding security issues in this region can be successfully addressed. However, the Bedouin youths and women involved in the various trainings were enthusiastic and appreciative of this opportunity to improve their skills.

3. One lesson to be learned from the LIFE Sinai project implementation is that **this project – or future projects facing an institutional environment in which stakeholders are dealing with a large development intervention of a sort they have never encountered before – would have greatly benefited from a “Year 0.”** The “Year 0” concept refers to a period, either at the start of an awarded project or during the period of problem assessment and project design before award, when extensive orientation and discussions about the nature of the development project occur, including intervention approaches, stakeholder expectations, and even training of counterparts (of the kind that LIFE Sinai provided to North Sinai Governorate staff, for example). There is no doubt that a Year 0 would have been very valuable for the LIFE Sinai Project, especially since it was expected to implement an ambitious set of tasks in only three years with what turned out to be a counterpart that was totally unprepared. As it was, the first year of the LIFE Sinai intervention effectively ended up being largely the “Year 0.”

#### **PROJECT IMPLEMENTATION IN A REMOTE SITE**

4. The implementation of LIFE Sinai underscored a lesson about relations with new counterparts which is applicable to a wide spectrum of development projects. That is, regular communication and dialogue with counterparts is essential while monitoring performance and acting on the monitoring data, to glean insights, to address barriers to implementation, and to take advantage of emerging opportunities, acting in collaboration with the counterpart. The LIFE Sinai Team quickly understood the need for regular dialogue with North Sinai Governorate staff, especially early in project implementation, and achieved close communications with those counterparts, overcoming the administration’s initial questions about the project’s intentions. This approach paid off in establishing a good working relationship, especially by the middle of Year 2.

# LIST OF TECHNICAL REPORTS

*Technical reports produced by the LIFE Sinai Program. Full versions are included in a CD-ROM accompanying this report.*

**A Review of the Literature on the Economy and Employment Profile of the North Sinai Governorate.** May 2009. Overview of industry and workforce characteristics by major sector as well services available to businesses.

**Programmatic Environmental Assessment Scoping Statement.** December 2009. Identifies the range of possible environmental issues and impacts that could arise from planned investments under the program. Collects background information and interviews stakeholders to identify most relevant and important issues on which to focus the actual environmental assessment. (With approval document ME-10-104 of June 2010)

**Programmatic Environmental Assessment.** December 2009. Examines potential activities of the program and develops best practices for engineering and management of constructed facilities and equipment, mitigation measures for potential negative environmental impacts, and an environmental monitoring plan. (With approval document ME-10-108 of June 2010)

**A Review of Water and Land Usage in Central Sinai: The Case of Bedouins in Hassana and Nekhl Districts.** February 2010. Description of Hassana and Nekhl districts, demographics, traditional use of water and land among Bedouins, trends in land and water uses, and discussion of possible interventions.

**Central Sinai Community Needs Assessment.** March 2010. Baseline study to provide comprehensive data on the natural, social, economic, infrastructural, and cultural aspects of Central Sinai communities. The report's findings focus primarily on the development and status of human capital, community-level public services and infrastructure and the kinds of livelihood strategies and sources of income that the inhabitants currently pursue.

**Comprehensive Community Development Strategy for Central Sinai.** May 2010. Outlines a strategy for the Government of Egypt and other parties interested in the long-term sustainable development of Central Sinai region to better target investments in North Sinai Governor with a focus on the Central Sinai sub-region.

**Central Sinai Public Transportation Technical Assistance Consultancy Report.** June 2010. Situation analysis and assessment of North Sinai Governorate's capacity to operate the bus service funded through the LIFE Sinai Program, including recommendations to improve operation and build capacity.

**Vocational Training Plan and Job Market Assessment in Central Sinai.** June 2010. Findings of a labor/skills market assessment conducted in Central Sinai and a plan to address skills gap identified.

**Value Chain Analysis: Olive Sector in Central Sinai.** July 2010. A detailed mapping of the olive value chain in Central Sinai including an assessment of the performance and linkages of its different parts and members, with recommended strategies to overcome the identified constraints and challenges.

**Assessment of Location and Construction Requirements for Selected Village Access Road Improvements in Central Sinai.** December 2010. Determines the location and requirements for access road construction/improvement to facilitate the delivery of water by trucks to the desalination plants service areas.

**English Access Microscholarship Program: Closure Report.** September 2011. Summary of Amideast's implementation of this program indigenous underprivileged youth in North Sinai to study English, learn about American culture and values, and develop important skills that will benefit them academically and, in the future, professionally.

**Small Business Development: Women Handicraft Project.** December 2011. Description of the activity "promotion of handicrafts as small business" from preparation to implementation and results.

**Water Desalination Plants in Central Sinai: Impact on Quality of Life.** December 2011. Presents the findings of a pre- and post-assessment study of the impact upon residents' quality of life from LIFE Sinai's establishment of three desalination plants.



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