



USAID
FROM THE AMERICAN PEOPLE

IRAQ

Inma Agribusiness Program Activities Progress Overview

FY 2008



Inma
AGRIBUSINESS PROGRAM

September, 2008

This report was produced for review by the United States Agency for International Development (USAID).
It was prepared by the Louis Berger Group, Inc.

SEPTEMBER 2008

Inma Agribusiness Program Activities Progress Overview

FY 2008



The *Inma* Agribusiness Program and this report are made possible by the support of the American people through the United States Agency for International Development (USAID). *Inma* is implemented by a consortium led by The Louis Berger Group, Inc. under Contract No. 267-C-00-07-00500-00.

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

Table of Contents

INMA ACTIVITIES PROGRESS IN FY 2008 5

ANNUAL HORTICULTURE 6

A. Retail and Wholesale Produce Markets Modernization

9 Nissan/New Baghdad Retail Market..... 6
Baghdad 'Alwa Wholesale Market..... 6

B. Produce Production and Marketing Improvement.

Rabee-Al Taeer Training & Demonstration Greenhouses..... 7
Rabee Fresh Fruit & Vegetable Packing Shed 7
Wassit-Al Kut Paste Tomato Production Trials 7
Crop Land Survey 8
Iron Horse/Taji–Abu Ghraib Vegetable Improvement 8
Lower Rashidiya Water Management Training and Application 9

C. Anchor Enterprise Rehabilitation and Development

Hameediyah Mushroom Farm..... 10
Balad Canning Factory (BCF) 10
Regional Refrigerated Transportation Enterprise..... 11

PERENNIAL HORTICULTURE 12

A. Improved Handling and Export

Zahidi Industrial Dates..... 12
Fresh Pomegranates. 12

B. Revitalization of Orchards and Vineyards

South Rashidiya Orchard and Vineyard Demonstration Activity 13

C. Processing Opportunities for Specialty Markets

Dates and Pomegranates Processing Trials..... 13

LIVESTOCK & FEED 15

A. Pond Fish Production and Marketing Improvement

Euphrates Fish Farm Fingerlings Production Improvement..... 15

Fish Grow-Out Best Practices Demonstration Trials.....	15
Fish Marketing Value Chain Improvement	15
B. Animal Feedstuffs Supply Value Chain Improvement	
Feed Grains Production Promotion and Productivity Improvement– Maize	16
Feed Grains Seed Multiplication and Distribution Improvement-Wheat and Barley.....	16
C. Value Chain Assessment and Economic Feasibility Analysis	
Dairy Production and Marketing	17
Red Meat Value Chain Assessment.....	17
Broiler Industry Economic Feasibility Analysis	18
D. Anchor Enterprise Rehabilitation and Development	
Feedlots	18
Feed Mills	19
Feed Depots	19
Feed Analysis Laboratory.....	20
Private Sector Veterinary Services.....	20
Windmills Demonstration Trials	20
CROSSCUTTING ACTIVITIES	21
A. Information and Knowledge Dissemination	
Training.....	21
Publications and Media Dissemination	21
Erbil Expo November 4-7, 2008	22
B. Data Collection, Analysis and Utilization	
Agricultural Wholesale Price Collection, Collation and Dissemination.....	22
Agricultural Market Information System (AMIS): Phase I.....	23
Agricultural Policy Institute	24
C. Debt Financing Systems Development	
Private Banks Grant to Loan Activity (G2L).....	24
Agricultural Production and Marketing Operating Credit.....	24

INMA ACTIVITIES PROGRESS IN FY2008

The USAID *Inma* Agribusiness Program is focused on long term and sustainable results critical to building and maintaining stability, security, and prosperity in Iraq. The *Inma* vision is to establish the foundation for a viable and profitable commercial agribusiness sector through capital and infrastructure investment, training, improved market systems and new technologies,.

Inma's major achievements since the beginning of the program include:

- *\$10,370,611 increase of total gross sales of program assisted enterprises;*
- *3251 jobs created in the agribusiness sector;*
- *\$2,473,650 increase in gross sales of targeted annual horticulture products;*
- *\$5,140,000 increase in gross sales of fish;*
- *A functional Market Information System providing daily wholesale pricing of 100 major agricultural commodities in 19 wholesale markets in 18 cities of Iraq;*
- *1,228 farmers directly assisted out of which 12% have documented increased income from their crops due to use of Inma-provided improved technology;*
- *1,656 individuals received short-term agricultural training;*
- *233 institutions/organizations undergoing capacity/competency assessments, and 57 institutions/organizations undertaking capacity/competency strengthening;*
- *32 new technologies or management practices introduced;*
- *17,750 hectares under improved technologies or management practices;*
- *1,232 farmers, processors, and others who have adopted new technologies or management practices;*
- *50 producers organizations, water users associations, trade and business associations, and community-based organizations (CBOs) assisted;*
- *30 agriculture-related firms directly assisted;*
- *17 baseline and feasibility studies produced, 30 monitoring plans, 8 sector assessments, 3 project evaluations, 8 special studies, 2 information gathering and research activities; and 74 people in monitoring and evaluation practices trained.*

I. ANNUAL HORTICULTURE

A. Retail and Wholesale Produce Markets Modernization

9 NISSAN/NEW BAGHDAD RETAIL MARKET The Market was constructed in 2004 by International Relief & Development, a USAID contractor. However, the market was never occupied for various reasons and has been in a state of disrepair. *Inma*, together with its partners, the Baghdad Provincial Reconstruction Team 2 (ePRT), CSP/IRD (Community Stabilization Program/International Relief & Development), District Council of 9 Nissan, Representative of Baghdad Provincial Council, and the Civil Affairs Office of the US Army, is working on market rehabilitation and revitalization to establish a clean and secure market with modern facilities, thereby facilitating increased effective demand for farm products. The market will directly create up to 700 new retail businesses. These businesses will generate over 1,000 new jobs and several thousand indirect jobs by additional service enterprises. Market management, food safety and produce quality will be ensured by the *Inma*-assisted NGO *NINMA*.

HIGHLIGHTS

- Renovation works completed include insulation of cold storage rooms, restoration of doors and windows on administrative buildings, water, plumbing and sanitary works, flooring, roofing and painting, boundary wall, as well as entry and exit gates.
- Provision of four new generators and of refrigeration units to enable usage of cold storage for market merchants is in process. Installation of doors and market stalls, parking area upgrade, security check points and guardrooms is in process, implemented by *Inma's* partners.
- *Inma* will provide professional management training to the market management once the rehabilitation and reconstruction works are complete.
- This activity was initiated in November 2007 and is projected to be completed by the end of CY 2008.

Status: In final stages of implementation

BAGHDAD 'ALWA WHOLESALE MARKET *Inma* has identified this privately owned wholesale market with potential for modernization, and located near vegetable production areas in the Golden Crescent¹. This fruit and vegetable wholesale market includes 85 produce sales locations and 21 seed stores. Market restoration is projected to increase sales from the current 980MT to more than 1,835MT, direct employment from 50 to 94 jobs, and indirect employment from an estimated 490 job currently, to 918 by mid-year 2009.

HIGHLIGHTS

- The activity is to be initiated during the third quarter of 2008, and will be completed by mid-2009.

Status: Pre-implementation phase

¹ One of three *Inma* Geographic Focus Areas.

B. Produce Production and Marketing Improvement

RABEE - AL TAAE TRAINING & DEMONSTRATION GREENHOUSES This activity is serving as a commercial demonstration and training facility in order to provide year-round high quality fresh produce to the Adhamiya and Baghdad markets. The greenhouses provide technical training to other greenhouse producers in the area by introducing best practices for greenhouse management.

HIGHLIGHTS

- The beneficiary received the greenhouses, purchased from *Inma's* implementing partner ARD Unifert. *Inma* distributed high quality seeds and the ePRT#5 provided plastic for the greenhouse tunnels. *Inma* carried out a greenhouse demonstration with its implementing partner. Under this activity, tomatoes are being planted in the greenhouses, and transplants will be produced for the early vegetable season.
- The Taae Greenhouse Activity started last spring and will continue as a training site for *Inma* activities until May 2010.

Status: In implementation

RABEE FRESH FRUIT & VEGETABLE PACKING HOUSE Current fresh fruit and vegetable packaging facilities in Iraq are inadequate and post-harvest losses are high (up to 40%). This project will demonstrate advanced post harvest handling technologies. *Inma* funds the building construction and the equipment, and the grantee provides working capital. The packing house will have a capacity to meet post harvest handling of 30MT per day of tomato, eggplant, green chilies, okra, cucumber, citrus fruit, grapes, muskmelon and pomegranate, etc. *Inma* estimates that 400 farmers will be involved in supplying the produce and 70 direct employees will be involved in operations and management. The packing house will distribute to approximately 150-200 retailers in the Baghdad market.

HIGHLIGHTS

- Five packing houses are proposed to be established under *Inma's* program.
- This activity is expected to be initiated by November 1, 2008 and to be completed by March 15, 2009.

Status: Approved for implementation

WASIT-AL KUT TOMATO TRIALS Iraq currently imports 60,000 tones of tomatoes per year. Fresh tomatoes, in terms of both area planted and value of production, represent the most important annual horticultural crop in Iraq. Large scale tomato processing, especially tomato paste processing, requires huge volumes of tomatoes, and, to be economically feasible, production of raw materials must be cost competitive. Since the 1990s, several tomato paste plants have ceased to function in Iraq. The few that are operating do so at very low volumes in terms of capacity, and use primarily the culls from production of fresh varieties as raw materials. In an effort to determine potential feasibility of restarting (or bringing back to profitable processing capacity) one or more tomato paste factories, *Inma* is providing technical support for field testing under Iraqi conditions of improved higher yielding processing tomato varieties presently unavailable

to Iraqi producers. These trials are intended to verify that Iraqi producers of processing tomatoes reduce their costs per unit of production to a point that both the farmer and the processing plant can be competitive in the domestic market place. These trials are being conducted by five farmers in the Al Kut area of Wasit Province. The prospective processor is the Al Numaniyah Tomato Paste Factory. 60 donums² have been planted to demonstrate that yields can be increased by at least 50%, at sufficiently lower unit costs to permit an economically viable tomato paste value chain. Lessons learned and best practices from this activity will be transferred to paste tomato producers in the Taji–Abu Ghraib area and to future suppliers of the BCF tomato processing line.

HIGHLIGHTS

- Paste tomato demonstration trial fields in the Al Kut area, Wasit Governorate, are growing rapidly and making good progress. The test plots are to demonstrate the profitability of delivering to the Numaniyah processing plant which is not operating at present because of lack of tomato supply. As the highest yielding tomato varieties are being identified, *Inma* will concurrently train area farmers in best production practices. In this way, an ongoing linkage of farmers producing to meet the identified demand of the factory will be established. At the end of this project, *Inma* will have produced test results to identify best adapted varieties, demonstrate best agricultural practices, determine the cost of production, and indicate necessary quality standards for first quality processing tomatoes. *Inma* also plans to transfer the knowledge to paste tomato growing farmers in the Balad area, Salah Al-Din Governorate. These growers, in turn, will be able to supply raw materials for the Balad Canning Factory tomato paste processing line.
- Field work for this activity was initiated in May 2008, with an estimated end date of December 31, 2008. *Inma* will explore possible continuation of this activity into the production area surrounding the Balad Canning Factory in 2009.

Status: Implementation well-advanced

CROPLAND AREA SURVEYS Official agricultural statistics date back to the turn of the century and it is difficult to confirm their accuracy. *Inma* and other decision makers in Iraq need accurate information on the structure of agriculture and livestock in order to redevelop the sector. For this reason, *Inma* will carry out several cropland area surveys in the main regions of interest for the project. *Inma* adapted area frame sampling methodology to Iraqi conditions in order to obtain reasonably accurate quantitative estimates of area in major crop categories. Field surveyors were trained to record observations using simple GPS equipment. A local contractor was engaged to perform the Kurdistan survey.

Status: Kurdistan region survey completed. Baghdad region district surveys suspended until the security situation improves enough to ensure the safety of surveyors.

IRON HORSE/TAJI–ABU GHRAIB VEGETABLE PRODUCTIVITY IMPROVEMENT ACTIVITY Iraqi agricultural production suffers from deteriorated market linkages that dampen effective demand, and from degraded seed of low quality and reduced yield potential. *Inma* designed this activity to provide growers in the area with new improved seed and to achieve significant increases in farm income. *Inma* provided 7 different new

² Donum – unit of area in Iraq, equivalent to 2,500 m² (26,910 sq ft).

varieties of high yielding, hybrid seeds (onion, tomato, cucumber, pepper, eggplant, squash seed) and plastic crop protection for 29 donums, as well as introducing best practices in harvest and post-harvest handling techniques, processing and packaging, for members of various Taji/Abu Ghraib Farmers Associations. Projected beneficiaries include 540 men, 1,100 women and 2,700 youth.

HIGHLIGHTS

- Seed and plastic sheeting were delivered to approximately 900 farmers.
- An excellent crop was harvested. With the introduction of modern seed hybrids and application of improved cultural practices, demonstrations showed an average 300 percent increase in yields.
- Although market prices remained steady, sales from higher yields increased by 300% per donum harvested. Because of improved product quality, additional income increases are now possible through value-added post-harvest handling, e.g., grading, cooling, packaging and transportation services improvements. *Inma* is planning a range of value-added activities, especially with the upcoming packing house activity.
- *Inma's* demonstration trials created an awareness and demand for higher quality input supplies, resulting in three new input supply stores (especially improved seed shops) opening in the Baghdad market.
- A Farmer Training initiative was carried out, including classroom instruction in farm business management, post harvest grading, packaging, and marketing. The total training initiative covered over 1000 farms, their owners, managers and workers. Farmers in the area have been exposed to new technology either through training or through observation of their trained neighbors, *Inma* estimates that the total number of people with knowledge of improved horticultural production and marketing practices is currently over 10,000 and will continue to increase, both through ripple effects and through continuing *Inma* training activities.
- This activity was initiated in the fall of 2007 and training will continue for the life of the *Inma* Program.

Status: In implementation

LOWER RASHIDIYA WATER MANAGEMENT TRAINING *Inma's* Lower Rashidiya Water Management technical assistance will contribute to finding solutions for the delivery and maintenance of water supply as over 700 farms revitalize their production, post-harvest handling and marketing operations to supply fresh produce to the growing Baghdad market. The 150-member Rashidiya Market Council provides business and other services to its members, including produce assembly for wholesale marketing and other farm-related services. It also acts as a liaison with the Government of Iraq, and, in the future, may assume responsibility for secondary and tertiary canal rehabilitation and maintenance through development of a subsidiary Water Users Association. To this end, and working through the Market Council, *Inma*, together with its international and domestic partners, will offer training, tools and equipment, and funding for initial rehabilitation operations.

Status: Project proposal is under development. The activity is projected to begin by January 1, 2009 and continue until May 2010.

C. Anchor Enterprise Rehabilitation and Development

HAMEEDYAH MUSHROOM FARM Cost-efficient mushroom production on a commercial scale is a high-technology undertaking requiring sophisticated technology skills and considerable management expertise. This farm is the only commercial mushroom farm in Iraq. It became non-operational because of physical damage to installations and deteriorated security conditions. A grant from *Inma* is restoring the farm to full production and marketing capacity. This support will assist to improve productivity, as well as increased value-added through incorporation of improved processing and packaging techniques. The target market is primarily within a radius of 100km of Baghdad. Distribution in this market area can reach at least 11 million potential customers. When fully operational, its output will satisfy local and national consumer demand for fresh, good-quality mushrooms, will generate 135 direct jobs, employing both men and women, and will stimulate considerable indirect employment in surrounding communities through demand for production inputs, and from secondary and tertiary economic multiplier effects.

HIGHLIGHTS

- Grant funds complemented by owner equity will permit the farm to become fully operational. Progress already has been substantial:
 - Rehabilitation of physical plant is 90% complete.
 - Replacement equipment for production has been procured and installation is complete.
 - Physical Plant equipment and installation is 70% complete, and progressing satisfactorily.
- All working capital has been made available by the owner as agreed.
- The grant, signed in April 2008, was scheduled to be completely disbursed by December 31, 2008. That target continues to be realistic.
- *Inma* technical support and training will continue until March 2010.

Status: Well advanced in implementation

BALAD CANNING FACTORY (BCF) *Inma* partnered with the US Military to renovate factory infrastructure and equipment, and restore the eleven product lines to full production capacity. This second largest food processing factory in Iraq once directly employed 880 males and 220 females, both Sunni and Shia. The factory generated demand for agricultural raw materials, the production of which employed over 8,000 persons living in the surrounding rural and urban areas, including more than 100 wholesale buyers and 60 raw materials jobbers from various governorates. BCF is producing and planning to produce sesame paste, date syrup, jams, kubba, tomato paste, bottled water (flavored and unflavored), juice and chips.

HIGHLIGHTS

- The activity was initiated with grant signing on April 17, 2008.
- Seven new generators have been provided to the factory. Rehabilitation work on pumps, tank mixers, electric works, lighting and windows are in progress.

- Output includes the *kubba* meat pie line, now producing approximately 500 pieces of *kubba* per day. The factory now is producing a new grape flavored juice drink, in addition to an orange flavored juice drink. Corn and potato chip production lines are operating at near full capacity. Rehabilitation work on the tomato paste line is in progress.
- BCF diversified its standard packaging, adding a convenient half-liter size bottle for potable water and juice, in addition to the existing 1.5 liter size.
- BCF produces approximately 50 boxes of *kubba* meat pies, 750 cartons of water, 500 cartons of juice and 1150 boxes of chips per week.
- With *Inma* support, the BCG has increased output from 5 percent to 65 percent of original operating capacity.
- The disbursement of grant funds was originally programmed to be completed by October 17, 2008. Disbursement tranches are based on achievement of milestones. The grantee applied for an extension of the original completion date to the end of 2008. *Inma* technical and training support and oversight will continue until May 2010.

Status: In implementation

REGIONAL REFRIGERATED TRANSPORTATION ENTERPRISE Refrigerated transport is an essential segment of the perishable products cold chain, linking packing facilities with wholesale, institutional and retail markets. *Inma's* goal is to create or expand an existing business with trucks sized and equipped to handle transportation of fresh fruits and vegetable from packing facilities to Greater Baghdad markets.

HIGHLIGHTS

- *Inma* has established initial contact with an Iraqi entrepreneur already in the refrigerated transport business with established market linkages. The entrepreneur is interested in expanding operations by offering refrigerated transport services to packing facilities coming on line with *Inma* assistance in the Golden Crescent. Other entrepreneurs also will be contacted.
- This activity will commence in parallel with *Inma's* packing shed activity to optimize stakeholder investments and optimize impacts on employment and incomes.
- The activity is projected to begin on January 1, 2009 and be completed by March 15, 2009.

Status: Submission for ARC approval pending initiation of the Packing Shed Activity

II. PERENNIAL HORTICULTURE

A. Improved Handling and Export

ZAHIDI INDUSTRIAL DATES *Inma* identified Zahidi industrial dates as one of two promising perennial products with high potential for re-establishing and/or expanding commercial exports from Iraq. *Inma* seeks to improve pre- and post-harvest handling and optimize the Zahidi dates value chain to increase value-added (unit values) and exported volumes. To achieve this, *Inma* is supporting value-added handling initiatives, including improved harvest and storage methods, improved processing and packaging, and improved access to potential export market opportunities.

HIGHLIGHTS

- *Inma* identified the best opportunity for expanding Iraqi dates exports is the India market. India is the only country with a sizeable growing demand for imported industrial dates, with an average annual growth rate of 15%. This market is currently the main outlet for the low-priced Iraqi *Zahidi* variety of dates, which enter India via UAE wholesalers. Iraq dates currently occupy the “good value for money” segment of export demand. *Inma* is working on assistance to Iraqi dates traders to establish linkages with UAE traders to export an estimated 20,000MT for the 2008-09 season. A matchmaking meeting between Iraqi date traders and foreign wholesale buyers is scheduled.
- *Inma*'s strategy is focused on export to UAE of Zahidi industrial dates and fresh pomegranates, by re-establishing and/or re-activating market linkages between Iraqi exporters and an international trader in Dubai. Throughout 2008-2009, *Inma* will promote and facilitate improvements in pre- and post-harvest handling techniques responsive to international quality standards.
- In July 2008, *Inma* organized a two-day Date Workshop in Erbil, which assessed quality and marketing obstacles faced by Iraqi growers, traders and exporters, and informed the development of *Inma*'s strategy for increasing value-added in marketing of dates.
- A potential activity to explore the feasibility of privatizing the date association in Najaf is under review.

Status: In Implementation

FRESH POMEGRANATES *Inma* collects market intelligence in order to match demand and supply between Iraqi exporters and foreign importers of agricultural products. *Inma* analyzes local, regional and international markets to detect opportunities for introducing Iraqi produce into global markets, initially by penetrating the regional market hub in Dubai. A trial export of fresh pomegranates from Northern Iraqi to Dubai is under way.

HIGHLIGHTS

- During 2008, *Inma* assessed Iraqi pomegranate production and the regional market demand for fresh pomegranates. This led to an initial strategy to carry out a pilot trial export of fresh pomegranates through the Dubai wholesale market. This trial is planned to take place in Suleimaniyah during the harvest season from late October to late December, 2008. The Suleimaniyah area produces some 10,000MT of pomegranates annually. In addition, pomegranates harvested in Diyala will be transported to Suleimaniyah.
- For the trial export, *Inma* identified a wholesale buyer in Dubai and arranged for improved packaging in order to penetrate this worldwide trade hub. 200MT of fresh pomegranates are being contracted for export as first class quality, and will be sold on consignment through a major Dubai trader as a test for market acceptability and cost effectiveness. This activity is the first step in establishing active trade relationships between Iraqi pomegranate growers and Dubai wholesale buyers. Additionally, this export trial will demonstrate a high value adding activity to Iraqi producers and traders, with positive influence on small and medium enterprises in terms of increased jobs and sales along the value chain.
- If the trial shows a potential for financial profitability and sustainability, *Inma* will provide support to expand commercial exports from different locations, such as Karbala, where early ripening varieties are grown, thus permitting entry into the global market during a window when competition from other producers is much more limited, and prices are at premium levels. This test will inform stakeholders of the potential for other value-added produce exports.

Status: In implementation

B. REVITALIZATION OF ORCHARDS AND VINEYARDS

SOUTH RASHIDIYA ORCHARD AND VINEYARD DEMONSTRATION Iraqi orchard and vineyard businesses have been neglected and suffer from low quality genetic material. Projected demand for stone fruit in Iraq and the surrounding region justifies the introduction for testing of new varieties and modern production technology. Varieties with appropriate chill requirements have been identified and will be imported for demonstration purposes. This activity will establish demonstration plots with selected farmers and establish 25,000 trees of certified, disease-free, and commercially tested varieties.

HIGHLIGHTS

- The activity is ready to commence implementation and is pending import authorization for new certified varieties from the Iraqi Ministry of Agriculture.

Status: Approved for implementation

C. PROCESSING OPPORTUNITIES FOR SPECIALTY MARKETS

DATES AND POMEGRANATES PROCESSING TRIALS *Inma* is assessing and determining the technical and economic feasibility of introducing new added value products within the value chains for pomegranates and dates. Examples include: 1) new/modified date syrup products with special flavors and/or added ingredients, 2) specialized packaging for date products, 3) fresh pomegranate juice in aseptic bags providing 12 months of shelf life.

HIGHLIGHTS

- A new development product for date syrup is underway, based on attractive flavors (vanilla, chocolate) and the addition of new ingredients such as caramel, cocoa powder and caramel milk. New product formulations will be presented in December 2008. The activity is completing its development phase. Samples will be developed beginning in November 2008. Product innovation will be tested and disseminated among potential investors and manufacturers during 2009.
- A new packaging development is also under way to identify single service pack for syrup (snack) and alternatives to metal can and glass jars for current 500g and 100g size in the market. The activity is completing its development phase. Implementation will start in October 2008 with completion estimated for December 2008.
- A proposal is being developed for fresh pomegranate juice processing for distribution in aseptic bags. A Mobile Fruit Processor Activity for this product is under review. Innovative fruit processors would produce pomegranate juice 15°Brix³ in aseptic package providing 12 months shelf life.

Status: Initial design/pre-feasibility studies ongoing

³ Degrees Brix (symbol °Bx) is a measurement of the mass ratio of dissolved sucrose to water in a liquid. A 25 °Bx solution is 25% (w/w), with 25 grams of sucrose sugar per 100 grams of liquid. In other words, there are 25 grams of sucrose sugar and 75 grams of water in the 100 grams of solution.

III. LIVESTOCK & FEED

A. Pond Fish Production and Marketing Improvement

EUPHRATES FISH FARM FINGERLINGS PRODUCTION IMPROVEMENT In February 2008, *Inma* contracted a large fish farm hatchery that had improved breeding stock to produce 6 million fingerlings.

HIGHLIGHTS

- The activity renovated and revitalized the privately owned Euphrates Fish Farm enterprise.
- Arranged for delivery of appropriate volumes of water to the hatchery during the fingerling production period, which also supplied water to downstream fish and crop farms.
- Supplied live haul tanks and delivery services for fingerling distribution to grow-out farmers.
- About 1,000 pond fish grow-out farmers received improved fingerlings.

Status: Completed

FISH GROW-OUT BEST PRACTICES DEMONSTRATION TRIALS Sequentially with successful fingerling production and distribution, *Inma* initiated trials with selected fish farmers who had received improved fingerlings to demonstrate the use of best practices in pond fish grow-out for market.

HIGHLIGHTS

- Fish Grow-Out Trials in Babel Province are under way. These trials will demonstrate increased yields and productivity, and reduced unit costs of production from use of quality feeds of appropriate nutritional levels. The trials also will demonstrate the economic benefits of applying improved aqua-cultural practices appropriate to conditions prevailing in Iraq.
- *Inma* selected 100 growers and divided them into five trial groups, with *Inma* extension agents providing training and monitoring of the weight of fish on a weekly basis.
- These fish will be at market weight in January 2009.
- Lessons learned from using improved breeding stock in hatcheries, improved fingerling production and distribution practices, and increased yields and productivity during fish grow-out all will contribute to increased output, better quality, and increased profitability of pond fish production in Iraq.

Status: Implementation well-advanced

FISH MARKETING VALUE CHAIN IMPROVEMENT *Inma* developed fingerling transport tanks that were made available to fish growers through their respective associations, to transport fingerlings to farms. These tanks now will be incorporated into

an activity to improve marketing of the fish once they are at consumer market size. The fingerling tanks will undergo some simple modifications to transport market-size fish. These modified tanks will significantly reduce mortality during transport of the fish to market. In addition, *Inma* will look for opportunities in one or more major fish wholesale markets to upgrade handling and conservation of live fish once they arrive in the market. Also, *Inma* will explore ways to assist wholesalers to obtain and utilize portable aeration tanks for holding live market-size fish for more prolonged periods, thus extending their sales window, resulting in increased volumes sold. Sanitary and reliable transport services for live market-size fish will decrease mortality rates during transport and significantly increase value added in the fish consumer market value chain.

HIGHLIGHTS

- Demonstration fish farming with application of different combinations of improved cultural practices is ongoing, and, in early 2009, data will be analyzed and disseminated to a wide range of fish farmers for future applications.
- This activity is a logical continuation of *Inma* support in order to alleviate marketing constraints to value-added in value chain segments from the farm gate into consumer markets

Status: In design

B. ANIMAL FEEDSTUFFS SUPPLY VALUE CHAIN IMPROVEMENT

FEED GRAINS PRODUCTION PROMOTION AND PRODUCTIVITY IMPROVEMENT – MAIZE *Inma* introduced new varieties of corn and other feed grains to bolster the supply of appropriate feed for the livestock sector, including poultry and fish. The maize production improvement activity was implemented during the 2007 growing season in the provinces of Anbar and Diyala, in cooperation with the respective PRTs and Provincial Directors of Agriculture.

HIGHLIGHTS

- Greatly increased harvest from improved hybrid seed and cultural practices was used by farmers for their own livestock, or sold in the local marketplace.
- Similar demonstrations of hybrid maize production may be replicated in other districts in subsequent crop cycles.

Status: Completed

FEED GRAINS SEED MULTIPLICATION AND DISTRIBUTION IMPROVEMENT – WHEAT AND BARLEY Using a high-yielding variety of certified wheat seed, *Inma* carried out a seed multiplication program during the 2007-08 growing season leading to a 100% increase in yield (2,300 kilos per hectare) compared to average Iraqi wheat yields.

HIGHLIGHTS

- In the absence of good quality locally produced seed, *Inma* imported certified improved seed for multiplication.
- On farms selected in consultation with the Provincial Directors of Agricultures, 6000 donums were planted in Anbar and Diyala provinces. The wheat was grown under supervision of the Provincial Directors of Agriculture.
- *Inma* trained farmers in seed production practices, including rouging, inspecting, cleaning, treating, packaging and marketing, as well as using seed drills, fertilization, and irrigation scheduling.
- Approximately 3,600MT of high quality seed were harvested, cleaned, treated, bagged and stored in Kurdistan by an *Inma* sub-contractor for purposes of multiplication during the fall 2008 planting season.
- Seed from this crop can be multiplied for a second season before releasing it as commercial seed to farmers.

Status: Completed

C. VALUE CHAIN ASSESSMENT AND ECONOMIC FEASIBILITY ANALYSES

DAIRY PRODUCTION AND MARKETING Milk from cows and ewes is a major source of cash income for farmers in the Baghdad region, in addition to the sale of feeder calves and lambs. Milk is sold to dairy processing plants, mainly to make cheese and yogurt. *Inma* is looking at projects to rehabilitate and expand processing capacity and to improve milk collection and transport from farms to processing plants. Lack of reliable electricity is a major obstacle and requires generators to provide cold or cool storage. *Inma* has begun analyzing constraints in the dairy sector such as reliable electricity and competition from subsidized dairy imports.

HIGHLIGHTS

- A Dairy Industry Report was produced by *Inma* in January 2008, assessing the current situation of key segments of the dairy value chain, including cattle inventory, milk production and distribution, consumption patterns and dairy market.
- At the request of the Al Anbar Provincial Council and PRT *Inma* produced a dairy farm feasibility analysis. The analysis examines a 300-cow dairy farm to determine investment needed and return on investment.
- Another dairy technical report was done in September 2008 for the Bunnia dairy farm in Wassit. This report was converted into a generic format as *Large Dairy Farm Management Guide*, for application to any large dairy farm in Iraq that wishes to establish a production center.

Status: Completed

RED MEAT VALUE CHAIN ASSESSMENT A Diyala Butchers Focus Group was convened in October 2007 to assess the red meat value chain in Iraq in reference to production, processing and marketing.

HIGHLIGHTS

- The resulting report highlighted constraints and issues of licensing, ownership and employment, lack of electricity and cold storage, discontinuous marketing linkages and high transaction costs, lack of appropriate slaughtering and veterinary services, and shortages of feed grains and forage.
- The findings and conclusions from this study gave impetus to development of an activity to introduce commercial feedlots for feeder calves and feeder lambs, along with other improvements in the feed supply backward linked value chain, as well as in the forward linked output processing and consumer marketing value chains.

Status: Completed

BROILER INDUSTRY ECONOMIC FEASIBILITY ANALYSIS *Inma* produced several in-depth analyses of the poultry industry in Iraq.

HIGHLIGHTS

- Current constraints in the broiler industry include lack of electricity, poor climate control, lack of reliable quality feed supplies, weak product market linkages, competition with low-cost imports from Brazil, high mortality, and lack of cold chain.
- The studies also identified a significant market for fresh chicken (an estimated 15-20% of total demand for chicken meat) and potentially a much smaller niche market for fresh slaughtered broilers that must be kept under refrigeration.
- *Inma* concludes that there are bleak prospects for profitability in the broiler industry, at least for the foreseeable future.

Status: Completed

D. ANCHOR ENTERPRISE REHABILITATION AND DEVELOPMENT

FEEDLOTS Based on red meat demand projections, and production and productivity improvement potential, *Inma* has selected commercial feedlots as the anchor enterprise intervention point for increasing value-added, reducing transaction costs, and strengthening linkages in the red meat value chain. *Inma* support will be provided to establish up to 20 commercial feedlots for fattening feeder calves and feeder lambs. These will demonstrate best cultural and management practices and nutrition to increase meat yields per animal, to improve meat quality, and to reduce unit costs of production.

HIGHLIGHTS

- *Inma*-supported feedlots will employ livestock fattening best technical and management practices to attain high feed conversion rates and rapid weight gains.
- In addition to consumers benefitting from increased supplies and higher quality red meat in the marketplace, other beneficiaries in the value chain include feedlot

owners and employees, local feeder animal and feedstuffs producers, veterinarians, and associated cluster support enterprises, such as feed mills, feed depots, local specialty butcher shops, etc.

- Contract with Iraqi training and technical services provider approved for signature.
- Request for application from potential feedlot operators approved for release.

Status: Implementation initiated

FEED MILLS The lack of nutritionally adequate and consistent quality feedstuffs is a major constraint for animal production in Iraq. This is especially true for monogastric animals such as fish and poultry, but ruminants, such as cattle and sheep, also need balanced feed rations. Feedstuffs currently available for fish and poultry are of unreliable and inadequate nutritional quality, and balanced rations are largely unavailable for ruminant fattening. In order to address these feedstuffs constraints, *Inma* is exploring several options.

HIGHLIGHTS

- *Inma* proposes to support rehabilitation and improvement of currently non-operating feed mills, now being identified and subjected to appropriate feasibility analysis.
- In Babel Province, there are many small feed mills producing pelletized feed for fish farms. Poor quality control of nutrient content and feed consistency is a problem. *Inma* is exploring introduction of higher capacity modern feed mills.
- Simultaneously, *Inma* is exploring the feasibility of upgrading one or more large currently non-operating feed mills to improve capacity and quality of feed made available to fish farmers in the area.
- *Inma* has completed an initial survey of a large non-operating feed mill in Babel, and has done an initial survey of one located in Fallujah.
- *Inma* is developing a proposal to carry out a detailed survey of all feed mills in the Golden Crescent.

Status: In process

FEED DEPOTS To complement commercial beef and lamb feedlots being assisted, *Inma* is developing a supporting activity to stimulate establishment of feed depots as anchor enterprises in the red meat feedstuffs supply chain. Feed depots will stimulate development of an efficient forage supply chain (forage production, hay-making, baling, storing and distribution) as complementary agribusinesses in the overall red meat value chain.

HIGHLIGHTS

- Feed depots will be owned by associations of farmers, or a single individual operator. Main feeds handled will be alfalfa hay, and feed grains such as barley, maize, sorghum, and feed-grade wheat.
- Feed depots will own and operate directly (or arrange for) appropriately sized equipment for mowing, windrowing baling and storing hay. The feedlots will generate a steady demand in the marketplace for hay and grain offered for onward sale by the feed depots to livestock producers and dairies, feedlot operators, etc.

- A proposal for *Inma* support in establishing feed depots is being developed.

Status: Design and development under way

FEED ANALYSIS LABORATORY Helping to strengthen an existing laboratory or setting up a new private sector feed analysis laboratory is important to the *Inma* Livestock Cluster. Feed mills and feed buyers need to be able to get reliable test results on batches of feed. The only way to ensure quality control is through periodic testing of the feed. *Inma* seeks to identify one or more potential opportunities for establishing a private sector feed analysis laboratory.

Status: Under consideration

PRIVATE SECTOR VETERINARY SERVICES *Inma* will explore options for improving existing or establishing new private sector veterinary service centers in the proximity of commercial feedlots and other areas of concentrations of livestock production and use. Such centers would offer animal health protection services, prevention measures, monitoring, control and elimination of animal diseases, monitoring and promotion of animal productivity, and possibly overall herd health management services. The centers may also offer basic laboratory services, artificial insemination and vaccination services.

Status: Under consideration

WINDMILLS DEMONSTRATION TRIALS As a practical alternative to assuring a reliable water supply in cases where relatively small but steady volumes are required, and when electricity is not available or is intermittent, *Inma* will demonstrate, test and evaluate windmills as a source of energy for pumping water for small scale livestock and agriculture, and for feedlot and greenhouse water needs.

HIGHLIGHTS

- *Inma* evaluation indicates that windmills may be a potentially attractive alternative for water pumping under conditions of low volume requirements. Windmills have low maintenance and nearly zero operating costs, and are especially adapted to remote areas where electricity is not available.
- This demonstration will enable *Inma* to test feasibility of using windmills to pump water supplies required for a range of enterprises, including greenhouse drip irrigation, feedlots, small cow-calf operations, etc.
- Six windmills procured from Pakistan will be installed and closely monitored at selected enterprise locations.
- Windmills are currently clearing customs at port.
- An RFP for installation and monitoring services is being developed

Status: Implementation initiated

IV. CROSSCUTTING ACTIVITIES

A. Information and Knowledge Dissemination

TRAINING Approximately 48,550 people will be trained by *Inma* by the end of the program, of which an estimated 7,400 will be in Perennial Horticulture, 17,000 in Annual Horticulture and 24,150 in Livestock and Feed activities. A training multiplier effect is achieved through Training of Trainers (ToT), Extension Training, and event seminars/workshops.

HIGHLIGHTS

- A ToT event was held in Erbil in April 2008 for the purpose of developing a cadre of trainers to support the Taji/Abu Ghraib (Iron Horse) hybrid vegetable seed program. During May and June, 49 already-trained trainers went to over 1,000 farms and trained over 10,000 farmers (men, women and youth) in Agribusiness Management, Cultural Practices in Vegetable Production, Marketing and Agricultural Safety.
- A Training of Trainers was held in Karada in May 2008 for the purpose of developing a cadre of trainers for the Babil Demonstration Fish Farm activity. Over 150 farmers have received training from these fifteen *Inma*-trained trainers during the summer of 2008, and this training is continuing into the fall.
- A Training in Best Practices in Wheat Production was held in Erbil in August 2008 with 18 agronomists and 13 Regional Field Staff to share lessons learned from *Inma's* 2007-2008 wheat activities. In follow up, *Inma* developed a Training Manual and trainers are ready for the 2008 fall planting and training of this season's farmers.
- Vouchers for a modular Agriculture Business Management Training Demonstration (in cooperation with the USAID *Tijara* Program) have been approved for implementation with a ToT activity to start in October. 500 farmers will be trained in the following six months. This training program will be piloted in northern Iraq, through *Inma's* partner, the Women Empowerment Organization, with another 500 vouchers slated later for the North Babel/Hilla area.
- A ToT activity is under development for Greenhouse Management to be held in Erbil during the month of October, with future trainings in the Baghdad area to follow.

Status: Ongoing

PUBLICATIONS AND MEDIA COMMUNICATIONS To increase USAID *Inma's* profile, presence and contributions to Iraqi agricultural development, *Inma* produces a range of public information materials, as well as technical reports and handbooks. *Inma* publications produced during the last year include:

HIGHLIGHTS

- Agricultural Calendar promoting Iraqi products for 2008, and Iraqi Farmers' Guide Calendar with children's artwork as illustration for 2009-2010,

- Five Special Reports on the program mission, scope and overall activities, summaries of *Inma's* findings and recommendations for the Iraqi dates and poultry industries,
- Fourteen technical reports, market assessments and value chain analyses on dairy farming, dairy industry, broiler production, date industry, pomegranate production, red meat value chain, pesticide evaluation and other topics,
- One handbook on Lamb Feedlot Management Guide and Best Practices in Wheat Production pamphlet,
- *Inma* brochure for promotional purposes, and
- Fifteen Success Stories on major program achievements.

Status: Ongoing

ERBIL EXPO *Inma* is the major sponsor of the forthcoming Erbil Agri-Food Expo, a regional event that will take place at the Erbil International Fair Grounds on November 4-7, 2008. *Inma* will be present at the fair grounds with a promotional booth and with a series of workshops and seminars covering a range of agriculture/agribusiness topics. These workshops and seminars, along with vendors promoting agriculture products and services from Iraq and the Middle East, will provide an opportunity for Iraqis to get a first hand look at agriculture in the 21st century. *Inma* will utilize this event to promote Iraqi agriculture and trade, establish contacts between buyers and suppliers, and track *Inma*-attributable business contracts concluded during and after the trade.

HIGHLIGHTS

- Estimated eight presentations will be held within the series of workshops and seminars at the Expo. The events will cover a range of agriculture/agribusiness topics relevant for Iraqi farmers and traders: Drip Irrigation and Use of Fertilizers; Agriculture Safety; Animal & Fish Nutrition and Production; Iraqi Agriculture Products and the World Market; Dates and Tissue Culture; Hybrid Seeds and Agriculture Business Plans.
- *Inma's* promotional booth will also host the program's partners, such as *Inma's* training partner, the women-led Women Empowerment Organization, as well as the women-owned Anka, *Inma's* partner in the Agricultural Market Information System (AMIS). *Inma* will distribute a wide range of educational, training and information materials in English, Arabic and Kurdish to Fair visitors.

Status: Implementation in final stages

B. DATA COLLECTION, ANALYSIS AND UTILIZATION

AGRICULTURAL WHOLESALE PRICE COLLECTION, COLLATION AND DISSEMINATION To facilitate transition to a market economy, *Inma* is collecting and disseminating marketing information throughout Iraq, providing farmers, private sector entrepreneurs and public sector policy makers with data on wholesale prices of many agricultural products and inputs.

HIGHLIGHTS

- During the past year, *Inma* and the US Military have shared funding responsibility for providing continuing daily and weekly reports of wholesale market prices in the 18 Iraqi provinces. *Anka*, a woman-owned Iraqi company, was selected for this purpose as a suitable implementing partner for this initiative.
- This type of data collection and dissemination initiative is supported through public sector funding in the US and in other countries. *Inma's* grant funding for this activity will continue until the Government of Iraq (GOI) is in a position to assume the funding responsibility. Nevertheless, efforts are being made to make the initiative at least partially sustainable.
- USAID approved a follow-on grant to *Anka* to fund this initiative through March, 2010. Under the grant terms, the data being collected and collated is proprietary to *Anka*; although *Inma* will receive all data generated and use it for *Inma* purposes, *Anka* has the exclusive right to market the data to potential users, and will seek to become largely self-supporting by the end of the grant period.

Status: Grant negotiations finalized; grant documents being finalized for signature.

AGRICULTURAL MARKET INFORMATION SYSTEM (AMIS): PHASE I The purpose of developing a national agriculture marketing information system is to improve market efficiencies. Efficiency is improved through greater transparency throughout product value chains, which creates opportunities for spatial and temporal arbitrage and improved production planning. Pricing knowledge creates a competitive environment and encourages transactional and operational efficiencies. Farmers are then better able to plan their production – making informed decisions about which varieties to grow and when to grow them. Market information also will improve farmer's negotiation position vis-à-vis traders and aggregators at the farm-gate.

The AMIS Phase 1 objective is to restore a basic system of collection and dissemination of agricultural data. There are three primary points of data collection in agricultural markets along value chains: the farm-gate, wholesale level, and retail level. Price differentials between each of the levels carry important market information such as marginal costs for processing, marketing, distribution, transportation, and premiums for value added. The *Anka* grant, summarized above, is collecting and collating wholesale prices. The AMIS-Phase I activity will initiate data collection and capacity building at the three market levels, taking into account the initiative already under way through the *Anka* grant.

HIGHLIGHTS

- *Inma* will issue a limited competition RFP for a US company to manage development of the Iraq Agricultural Market Information System and undertake collection of market data. The US firm will be required to partner with a local Iraq institution(s) to implement the work, to maintain one long term contracted person at the *Inma* offices in Baghdad and arrange for Short Term Technical Assistance (STTA) as needed. Additionally, market information will include *Inma's* M&E data requirements.

Status: In design stage

AGRICULTURAL POLICY INSTITUTE The transition from a command-and-control based to a market-led economy requires substantial policy analysis and policy reform work in the agriculture sector. While the public sector is responsible for enacting policy reforms and for monitoring implementation of these policies, the private sector has a critical role in informing and dialoguing the policy making and reform process.

HIGHLIGHTS

- *Inma* proposes to examine feasibility of supporting an initiative to establish a private sector Agricultural Policy Institute (API), likely to be located in an Iraqi University. The Institute would be created by various private sector organizations representing a broad spectrum of agribusinesses and other agricultural interests in Iraq.
- The API would conduct analytical studies designed to examine all sides of various policy issues that its advisory board would place on its agenda.
- A first step will be to carry out an assessment of feasibility of establishing the API, including identification of possible private sector stakeholders, identification of alternatives for the institutional “home” for the API, estimate of start-up costs and establishment time frame and potential for sustainability.

Status: Under discussion for carrying out initial assessment

C. DEBT FINANCING SYSTEMS DEVELOPMENT

PRIVATE BANKS GRANT TO LOAN (G2L) INITIATIVE In order to facilitate access to adequate financing for agribusinesses, *Inma* will use grant funds to assist selected private banks to loan-finance commercial agribusiness capital investments. This activity will strengthen private sector banks by assisting to build capacity to make and service agribusiness loans.

HIGHLIGHTS

- The RFA was issued for this activity, and nine private Iraqi banks submitted incomplete applications. Evaluation of these applications is in process, expected to be finalized in October 2008. Simultaneously, a RFP for training of the program-selected banks was issued to select a sub-contractor for bank training.

Status: Pre-implementation in process

AGRICULTURAL PRODUCTION AND MARKETING OPERATING CREDIT INITIATIVE *Inma* is seeking to develop a farm production and marketing operating credit line in support of its value chain strengthening initiatives, to be implemented through grants to existing Iraqi micro-finance NGOs.

- The Microfinance RFA was completed and will be issued to the twelve present Microfinance Institutions (MFIs) by the end of October 2008.

Status: Pre-implementation in process