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وزارة للزراعة واستصلاح الأراضي  
الوكالة الأمريكية للتنمية الدولية  
مشروع إصلاح السياسات الزراعية  
وحدة تصميم وتنفيذ السياسات

*Ministry of Agriculture and Land Reclamation*

# AGRICULTURE POLICY REFORM PROGRAM

*Reform Design and Implementation Unit (RDI)*

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**RDI REPORTS**



**APRP**

***Reform Design and Implementation Unit***

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*Report No. 166*

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**VISION  
FOR  
AGRICULTURE**

*Prepared by:  
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## INTRODUCTION

*The Reform Design and Implementation (RDI) Unit of the Agricultural Policy Reform Program (APRP) works with the Government of Egypt and the Egyptian private sector to alter policies, laws and regulations to be consistent with a market-driven private sector led agricultural economy. The lead Ministry in the APRP is the Ministry of Agriculture and Land Reclamation (MALR), and the RDI Unit is located on the campus of the MALR. The others participating in the program are: the Ministry of Foreign Trade, Ministry of Water Resources and Irrigation, and the Ministry of Home Trade and Supply. In addition, RDI works close with such private sector organizations as the Egyptian Seed Association (ESAS), the Horticulture Exporters Improvement Association (HEIA), the Egyptian Agribusiness Association (EAGA) and the Agricultural Commodity Council ACC. The goal of the APRP, and all those working in it, is to improve the competitiveness of Egyptian agriculture in local and world markets.*

Egypt is blessed with good land and water, abundant sunshine and no rain, excellent farmers and a talented business community. It is located within close and easy access to markets in Europe, the Middle East and Africa. The work of RDI/APRP is to build on these natural advantages to permit Egyptian products to be more competitive internationally and less costly at home. The program promotes policies and regulations or activities to do the following:

- A. Improve technical efficiencies, to reduce production or processing costs;

Policy example: RDI and the MALR worked together to develop the executive regulations for plant variety protection. With introduction of newest varieties, production costs will be reduced, and international competitiveness will increase.

Activity example: RDI and the Central Administration for Pest Control are implementing a new decree to transfer all responsibilities for cotton pest management to farmers, private sector traders and the government. Studies show that implementation of this decree significantly reduces pesticide costs.

- B. Improve marketing through cost reduction or quality improvement;

Policy example: The MALR, MFT, ACC with support from RDI worked to issue decrees to ensure good quality fish and shell fish for export to the EU. The decrees address the need for hygiene and sanitary standards consistent with EU regulations.

Activity example: The ACC, HEIA and RDI worked to gain approval to build a perishables terminal in the Cairo Airport. HEIA will operate the terminal. The terminal will improve the quality of exported fruits and vegetables from Egypt.

- C. Bring Egypt into conformity with international laws or conventions.

Example: The MALR, GTZ and RDI are working together to help the GOE conform to new EU pesticide regulations which are to be implemented next year. This new regulation reduces significantly the number of pesticides acceptable to the EU, and it establishes new maximum residue levels. Failure to comply with this new regulation risks losing the European market for agricultural products.

How does the RDI Unit work? There are two components to our mode of operation: content and process. With respect to content, RDI, in tandem with local stakeholders and experts, does the following:

1. Conducts a study to understand or identify a constraint to agricultural development. The constraint could be the existence of a policy that is inappropriate for a modern market driven economy, or it could be the lack of an appropriate policy or law;
2. From the study, priorities for change or recommendations for policy adjustments are made;
3. Often, RDI and the GOE counterpart organization conducts a pilot program to test recommendations for policy change;
4. Based on the results of the pilot program, the GOE entity makes a formal policy change;
5. The pilot program is expanded countrywide, and transferred to the relevant agency in the GOE or the private sector.

With respect to process, the RDI Unit never works alone. Local stakeholder involvement is a fundamental requirement of success. Every step of our work process includes local input. Policy changes are not accomplished in a vacuum, they are the result of fierce debate and participation of all stakeholders in studies and pilot programs. Also, the RDI Unit's method of work strives for complete transparency. This engenders ownership, making the transfer of responsibility to the GOE or private sector entity easier and sustainable.

In the pages that follow, the RDI Unit presents its vision of the future of agriculture in Egypt. We present 11 "visions" of agricultural outputs or inputs subsectors. Each vision is the product of a number of factors; 1) our six years of work in the sector; 2) outputs from a series of "vision" workshops held during the spring of 2002 in which relevant stakeholders gave their opinions about the future of the agricultural sector; and 3) our own best thinking about what is possible and desirable and what the GOE or the private sector needs to do to achieve it.

The following visions are presented: 1) cotton; 2) horticulture; 3) agricultural sector institutions; 4) agricultural cooperatives; 5) land; 6) on-farm water management and conservation; 7) seeds; 8) pesticides; 9) agricultural statistics and information; 10) agricultural research and technology transfer; and 11) fish resources.

Each section provides a vision statement, that is, what that particular sub-sector can achieve at an undefined period in the future. Following the vision statement is a discussion of why this vision is important to Egypt. We then discuss recent progress, and describe objectives, which if achieved, lead to realizing the vision. The papers also identify the main constraints to realization of the visions.

# Cotton

## Vision

*The world market for cotton and textiles is liberalized and Egypt is able to compete effectively both as an exporter of cotton lint and of textiles and apparel. Egyptian farmers, industrial workers, and consumers benefit from trade liberalization in cotton and textiles. Egyptian spinners have full access to low-cost cotton from any source to satisfy the needs of the domestic market.*

## Why is this Vision important?

1. **Employment and Income in Agriculture.** Cotton production occupies over half a million rural households during six months of the year and it constitutes the main source of cash income for those households. Most producers have very small plots of cotton; thus, income from cotton is widely distributed among the rural population. Farmers in the entire country grow cotton in roughly the same proportion of land in rotation with other crops.
2. **Employment in Industry.** The textile industry employs half a million workers throughout the year, and indirectly through the multiplier, generates over one million additional jobs. It constitutes the principal manufacturing activity in the country in terms of employment. Removing constraints to liberalization of the cotton and textile sectors will further increase productive employment. Ready-made-garment export factories employ large numbers of semi-skilled workers, mostly women. Employment in cotton, textile, and apparel sectors thus benefit rural and urban communities.
3. **Foreign Exchange Earnings.** Cotton and textile exports generated in 2000 over \$1 billion dollars, an amount only exceeded by oil exports. Cotton lint exports only account for about \$200 million dollars; the higher value-added manufactured products accounted for the rest.
4. **Competitive Advantage in these Sectors.** Cotton has been Egypt's main agricultural export for many decades and it consistently offers comparative advantages over most other crops. Only rice offers comparable competitiveness, but its market is more limited and it uses large volumes of irrigation water. The ready-made-garment industry dedicated for export has already demonstrated to be internationally competitive and a generator of both foreign exchange and large number of jobs.

## Progress on Cotton

- **Privatization of Alcotexa.** The composition of the management board of the Alexandria Cotton Exporters Association has radically changed in the past four years. Ten out of the twelve members are now private trading companies and the Chairman of Alcotexa is also a private exporter. Private membership has also increased to 18 out of 24 total members. These changes reflect the diminishing fortunes of public trading companies, as the gradual liberalization of cotton marketing has opened opportunities for private traders to compete.

- **Increased Exports of Lint.** Export commitments of cotton lint in 1999 and 2000 exceeded 100,000 tons from a low of 19,000 tons in 1996, but in 2001 they dropped to 83,000 tons
- **Price Flexibility.** Stronger presence of private traders has also resulted in some pricing flexibility in both exports prices and buying prices from farmers. Despite Alcotexa setting narrow export price ranges, private exporters regularly offer discounts to foreign clients. Discounts were especially high in 2001/02 because the devaluation of the Egyptian pound after October 2001 has led to windfall profits for private traders.
- **Price Guarantees to Farmers.** Pricing is now more realistic and in harmony with international prices. The Government has not had to pay much in terms of price deficiency payments in the past few years, even though international prices have been very low by historical standards. The devaluation of the Egyptian currency allowed the government to live up to its floor price commitments to farmers without incurring much of a cost.
- **Private Marketing Rings.** Private non-PBDAC cotton marketing rings are now possible. Farmers now have more choice of buyers for their cotton, and prices offered by private traders are more favorable. Official cotton marketing rings are also more fairly distributed.
- **Privatization of Trade.** Private sector share in cotton trade is greater now while public sector trading is rapidly shrinking, especially in exports. Public trading companies still are assigned most of the official marketing rings, but the private sector has opened alternative marketing rings or direct purchases from farmer cooperatives. Financing for private purchases has not been as big a problem, perhaps because banks can use purchased cotton as collateral for credits.
- **Imports of Short Staple Cotton Allowed.** Spinners in 2001 imported the equivalent of 25,000 tons of short staple cotton from Greece, Sudan, and Syria. The cost of imported short staple is roughly half the price of the long-staple cotton varieties (Giza 85 or Giza 89). Most of that was brought in by private spinners because public spinners are forced to use cotton from the accumulated stocks now in the hands of the government or public sector trading companies. This has given a market advantage to private spinners who have expanded their operations despite the gloomy outlook for the spinning industry worldwide.
- **New Varieties.** Several new cotton varieties with good export potential have been introduced in the last four years. Giza 88 in the ELS category has replaced Giza 77 and Giza 76. Giza 86 has excellent fiber characteristics, though farm productivity remains a problem. Giza 91 is being tested and it appears promising in Upper Egypt.
- **Private Spinning.** Increased privatization of spinning has taken place quietly and despite little progress in divestiture of public spinners. Private spinners now produce a growing percentage of cotton yarns, using significant quantities of imported cotton lint. Private spinners also handle nearly all yarns made of man-made fibers.
- **Private Ginning.** The privatization of ginning is a remarkable achievement that brought about the introduction and rapid expansion of universal-density bales and improvement of quality through better handling and reduced contamination. Private gins now handle over half of the cotton crop, and nearly three-quarters of the exported quantity.
- **Cotton Logo.** An "Egyptian Cotton" logo was designed and adopted by the Ministry of Foreign Trade to be used as a promotional device in marketing products made of Egyptian cotton worldwide. The Egyptian cotton logo has been trademarked in Europe and the United States and several licensed manufacturers of towels, household accessories, and other products

are already using it. At least two companies in China and one in India have received licenses to use the Egyptian cotton logo recently.

- **Variety Map.** Production of ELS varieties almost came to an end in 1999 when the authorities decided to discontinue production of three varieties -- Giza 70, 77, and 76 -- in view of the enormous stocks of unsold ELS cotton accumulated in previous years. Only a small area of Giza 70 was retained. The cotton authorities realized that the real problem was overpricing of those varieties and in the following years they adjusted prices down and those stocks nearly disappeared. The new 2002 variety map expands the area and production of ELS varieties (now including Giza 88). Cotton authorities have become more aware of the importance of market prices in deciding the choice of varieties, and the perverse effects of accumulating unsold stocks on decisions concerning production in subsequent years.
- **CATGO HVI Testing and Website.** Spinners around the world are adopting the measurements of cotton fiber properties available from the HVI (high volume instrument) equipment. These measurements enables them to make better decisions regarding blending of different types of cotton to achieve yarn specifications at minimum cost. Users of American cotton have enjoyed that information for many years from tests conducted by USDA. Egypt now has a nation-wide program of HVI testing of every lot coming out of gins, performed by CATGO (Cotton Arbitration and Testing General Organization). The results of these tests are now made publicly available through the Internet, thus enabling foreign and domestic spinners to identify specific lots that satisfy their needs.
- **E-trade in Cotton Lint.** Availability of HVI through the Internet makes it possible for potential buyers to contact Egyptian exporters to negotiate transactions directly. In the past, Egyptian cotton was not sold to spinners but to large merchant houses in Europe for subsequent sale to spinners. USDA already conducts large-scale auctions through the Internet to sell cotton (upland and Pima) that growers forfeited to the US Government under the loan deficiency program. But before e-trade in Egyptian cotton can be made, some regulations need to be changed. The Ministry of Foreign Trade has authorized that Alcotexa will accept transactions carried out through the Internet in a transparent manner. Public sector trading companies can thus sell some of the unwanted stocks in their hands.
- **Phasing Out of Farfara.** Until 1996 all Egyptian cotton exported was subject to "farfara" -- a procedure to blend cotton from bales of different grades to arrive at a mix of average quality. The mix was re-pressed into high-density bales for export. This procedure was performed by a single state-owned company in Alexandria and costs from 14 to 17 cents per pound. Private exporters first got the right to export standard UDB bales directly out gins. UDB presses spread very rapidly in the past four years, and now nearly three quarters of cotton exported leaves without farfara. This has saved private exporters the cost of farfara and enables them to offer discounts to foreign buyers below the official Alcotexa export prices.
- **Cotton Lint Exports to the USA.** It is especially satisfying for Egypt that American manufacturers are importing Egyptian cotton, instead of using their own Pima or other types of US cotton. Two varieties account for the bulk of those exports, Giza 83 and Giza 80, which are the shortest staple and cheapest Egyptian varieties. These buyers use Egyptian cotton mainly to produce yarns for toweling and terry cloth. This illustrates the potential of Egyptian cotton for use in producing coarse yarns (Ne 12-16) with special characteristics such as softness and high absorbency. We need to break out of the mindset that Egyptian cotton is only for making extra-fine yarns for very special purpose garments. Clearly, MLS varieties also have a wide market potential.
- **Better Market Information.** Great improvements have been made in the past four years in improving accessibility of market information to cotton traders, exporters, and potential buyers

of Egyptian cotton. Alcotexa's weekly reports of export sales are now available through its Internet website. CATGO now publishes two weekly reports in Arabic with updated results of both cotton classing and HVI tests on ginned cotton. CATGO recently opened its own website to make those reports available through the Internet. APRP has designed and set a website for reporting cotton prices and market performance of Egyptian cotton in comparison with its main competitors in the world market. Other sources of market data -- USDA, ICAC, and CAPMAS -- are also becoming more accessible through the Internet.

- **Increased Exports of Apparel.** Ready-made-garment (RMG) exports already amount to over \$500 million -- as much value as exports of cotton lint, yarns, and textiles -- and their importance keeps growing year by year. Unfortunately, over 99 percent of those RMG exports are made of imported yarns and fabrics, i.e., they do not incorporate any Egyptian cotton. This illustrates clearly that garment manufacture in Egypt is an internationally competitive activity in both quality and cost. It also demonstrates that the costs of yarns and fabrics made in Egypt with Egyptian cotton are not competitive for use in making most of the RMG exports. Some private spinners are only now starting to produce yarns with imported short staple cotton that can compete in price with imported yarns from Pakistan and India, but they prefer to sell them in the domestic market where prices are higher.

## **Objectives that will Contribute to the Overall Vision**

1. **Eliminate regulations set by ALCOTEXA concerning minimum export prices.** Export prices are now more flexible than before but Alcotexa prices are still very restrictive, especially for the public sector trading companies. Alcotexa should record and report actual prices negotiated by exporters, without imposing administrative prices on any exporter.
2. **Eliminate regulations set by ALCOTEXA concerning minimum export grades.** Minimum exportable grade restrictions are veiled measures to ensure that domestic spinners have ample supplies of Egyptian cotton at below-market prices. It hurts exporters by preventing them from selling at higher prices, and it hurts the industry by forcing them to use expensive Egyptian cotton.
3. **Promote farmer participation in variety selection.** The Government currently controls variety selection. Growers have a negligible voice in selecting cotton seed varieties.
4. **Promote private sector production and marketing of cotton seed.** The Government controls cotton seed production and distribution as well. Introduction of non-Egyptian varieties of cotton seed is strictly forbidden, for fear of contamination. Cotton seeds for next year are selected from commercial crops. There are no farms specialized in seed production.
5. **Allow spinning mills to use imported as well as local cotton.** Spinners need access to cheap short staple cotton to produce yarns and fabrics for the domestic market. For the Egyptian cotton industry to survive it needs access to cheap short staple cotton, whether imported or produced domestically.
6. **Privatize the spinning industry and trading companies.** The underlying problem with the cotton and textile sectors is state-ownership of the large spinning and weaving industrial complexes. Their inherent management inefficiency forces Government into imposing restrictions to protect them, but those restrictions also do enormous damage to the rest of the sector and the economy. Given the political barriers to

privatization of these industrial complexes it may be best to let the public sector spinners gradually disappear while encouraging new private spinners to expand.

7. **Eliminate restrictions of imports on yarns, fabrics, and garments.** Restrictions on imports of yarns, fabrics, and garments keep the costs of these items high for consumers and render downstream industries less competitive. Protecting the industry from foreign competition has become the main driving force for policy making.
8. **Eliminate the need for the government as buyer of last resort.** The Government should not accept responsibility for taking over finance and storage costs for stocks of unsold cotton. Once the Government fulfills its obligation to ensure farmers get the floor prices and makes the necessary deficiency payments, the cotton belongs to the buyers and they should assume full responsibility for its marketing and disposal.
9. **Activate and strengthen the role of cotton home trade association.**

## **Constraints to Achieving Objectives and Overall Vision**

1. **Administrative Management Decisions.** Key production and marketing decisions such as pricing, variety areas, and quality standards, are made by appointed public sector bodies rather than by entrepreneurs acting purely on commercial considerations.
2. **Price Inflexibility.** Prices are set once per year and kept rigidly at the same level despite changing market conditions. This allows competitors to undercut Egyptian prices and leads to loss of market share and to accumulation of unsold stocks. Despite privatization of the Alcotexa management board, this pricing behavior has persisted.
3. **Forcing Industry to Use Egyptian Cotton.** Farmers do not produce sufficient quantities of the higher yielding and cheaper varieties of cotton. The Government sets areas allocated to each variety, and public sector spinners are forced to use expensive stocks of unsold LS and ELS cotton. (Private sector spinners are allowed to import cheaper short staple cotton, but some roadblocks remain).
4. **Self-Sufficiency Mindset.** In 2000 and 2001, cotton authorities restricted the export of Egyptian cotton to ensure ample supplies for the local industry, even though for every ton of long-staple exported, spinners could import nearly two tons of short staple cotton. That could have helped make the industry more competitive.
5. **Diffused Responsibility for Decisions Among Public Agencies.** Those making pricing decisions are not the ones who have to pay the cost of storing unsold cotton stocks. Likewise, those responsible for making area and production decisions do not gain or suffer from the consequences of those decisions. In the end the Government is willing to accept all risks and the costly consequences of mistakes, while impacts are diffuse and lead to a lack of accountability.
6. **Lack of Progress in Privatization of Spinning Industry.** Many of the decisions taken by cotton authorities are the result of their interest in protecting the state-owned spinning industry. Ensuring their continued operation and employment of thousands of unneeded workers has distorted the entire sector.

# Horticulture

## Vision

*The value of horticultural exports are triple 2002 levels and surpass cotton and textile exports, making it the largest agribusiness sub-sector in terms of export value, and among the largest in terms of investment and private sector job creation. Small-holders account for half of all production for export, and women account for three quarters of new job creation.*

## Why is This Vision Important?

1. **Potential Export Volume is Huge.** Agricultural exports account for about 25% of total exports, yet only about 5% of horticulture production is now exported, and the bulk of export volume is composed of low value vegetables such as potatoes and onions. As quality systems from production to transportation improve, the proportion of export quality production will increase. The export volume impact of a proportional increase in export quality production is huge.
2. **Land/Value Ratio – High-Value Crops on Small Farms.** Horticulture crops, on average, produce higher value per feddan than other agricultural products. This land/value ratio is particularly important because most horticulture production is on small farms. The ability to grow high-value crops on small plots will have a significant impact on smallholder income, poverty alleviation, and increased employment, especially for women.
3. **Contract Growing Arrangements offer Tremendous Potential for Smallholder Participation.** Though many successful exporters are large producers, horticulture offers tremendous potential for smallholder participation through contract growing arrangements. In fact, such arrangements are necessary for larger exporters to expand beyond their captive production areas.
4. **Large Numbers of New Jobs.** Horticulture is labor-intensive, capable of creating large numbers of new jobs on small farms, large farms, and in marketing and processing.
5. **Horticulture – Highest Value of Output per Unit of Water Input.** Horticulture uses irrigation water efficiently – producing the highest value of output per unit of water input.
6. **Further Expansion Now Possible for Other Fruits and Vegetables.** The clear success of HEIA in improving the competitive export position of its members (e.g., strawberries, grapes, melons) illustrates the potential for further expansion of the sub sector for other fruits and for vegetables, e.g., cut flowers, medicinal plants, and organic fruits and vegetables. This will lead to more jobs and income growth for farmers and exporters.
7. **Bringing Private Investment to Agriculture.** The private sector is ready to invest significantly in horticulture, particularly in post-harvest handling systems, cold chain equipment, and processing facilities. This private investment will drive sub sector expansion. The public sector has a critical role in removing barriers to improved pesticide services, facilitating air/sea transport systems, and disseminating information on markets, and technologies for post-harvest loss reduction and processing.

## Progress in Horticulture

- **Perishable Terminal at Cairo Airport** . APRP in coordination with HEIA conducted a pre-feasibility study for a perishables terminal at Cairo airport in mid-1999. The terminal is under construction by HEIA who will be the sole operator, and is slated for completion by the end of 2002. The terminal will provide the only suitable facility to store and handle perishable products for air export. Export product quality, volume, prices, and export revenues will improve. Efforts are currently underway for a similar terminal at Luxor airport.
- **Import Inspection Time Reduced for Refrigerated Containers**. MEFT Decree 106 of 2000 coordinated import inspections on imported foodstuffs under administrative authority of GOEIC. Prior to the Decree, the lengthy inspection process increased port dwell time for refrigerated containers up to 3 weeks and increased container port congestion. The coordination has reduced dwell time to less than 15 days. A related activity resulted in expedited customs clearance of imported refrigerated containers without forcing payment of the equivalent customs duty on the value of the empty container .
- **Increased Business Linkages** .Increases in formal and informal exporter/producer supply arrangements, or contracts among larger exporters. Though the volumes represented by supply arrangements are small relative to total production that is exported, the proportion is growing. In one example of an informal arrangement, APRP gathered groups of melon and grape growers in Upper Egypt and sought technical assistance from HEIA to improve crop quality for export and create business linkages with HEIA buyers of export-quality crop .
- **Improved Process for Pesticide Registration** .Decree 663 of 1998 which improved the registration process for pesticides. MALR has also pursued related objectives such as registration of bio-pesticides, and fingerprinting analysis which will precisely identify active ingredients and improve farmer access to the best pesticides, and reduce availability of inferior products.
- **Strong Private Sector Advocacy** .Development of the Agriculture Commodity Council and HEIA as advocacy bodies for exporters. Both associations effectively used media and other public awareness activities to encourage the GOE to offer HEIA a contract to build and operate the perishables terminal at Cairo airport. They have been active in other policy advocacy issues as well.
- **Imports of Used Trucks** .MEFT permitted imports of used trucks no older than 7 years. Previously, used truck imports were banned which encouraged the imports of used parts and“ chopped trucks ”which are reassembled locally, and often in poor and unsafe condition .
- **Horticulture Website** .APRP is developing a horticulture website at the request of the Egyptian Export Promotion Center (EEPC). The website, to be managed by the EEPC ·will initially contain Egyptian wholesale price data, export price data for fresh horticultural crops, and graphical price analysis .

## Industry Successes

- **HEIA -- A Success Story** .Prior to the advent of HEIA in 1996, horticulture exports were essentially limited to traditional low value crops like potatoes, onions, and garlic. HEIA focused initially on expanding exports of a small number of high value crops including strawberries, grapes, green beans, and melons. Member exports of these crops have grown substantially, but the volumes still remain small relative to total horticulture exports. HEIA now has successfully expanded to include about 140 medium to large size

grower/packer/shippers, and has increased coverage to include cut flowers, organics, and other high value fruit and vegetable crops. HEIA provides technical support in quality control, technology transfer in production and post-harvest handling. Examples of HEIA successes include:

1. Arrangement of sea-land intermodal refrigerated container shipments to the UK via the Slovak port of Kooper (Danube River) which reduced total transit time by at least 50%, to 5 days, compared to shipping direct by sea.
  2. Developing an internationally certified grape nursery in Egypt capable of producing true-to-type and virus-free grape rootstock .
  3. Development of a HEIA Quality Seal for products that meet HEIA's minimum export standards .
- HEIA and the ACC have become assertive advocacy bodies to induce change in regulations, e.g., reducing direct and indirect taxes on horticulture production, reducing transportation costs by lowering import tariffs on imported trucks and refrigerated containers, and simplifying regulations governing the import of new seed varieties .

## **Objectives that will Contribute to the Overall Vision**

1. Air, sea, and land-based inefficiencies are reduced, resulting in lower horticulture product prices, higher quality, and an improved competitive position for fresh fruits and vegetables.
2. Import duties are reduced and duty draw-back procedures are implemented on imports used in export horticulture in order to reduce the total production cost base and increase Egypt's competitive cost position relative to other exporters to the EU.
3. Producer access to high-quality and proper seed varieties and planting materials from imported sources is unrestricted. Local seeds and planting materials are continually improved to provide producer access to high quality local material.
4. Producers have timely and free access to the most recent technology in effective and safe pesticides.
5. Market access, market information and export promotion resources and services are available to the private sector.
6. FDI, local investment, and technical transfer are enhanced so that product quality is increased, value-added is maximized, and post-harvest losses are reduced.

## **Constraints to Achieving Objectives and Overall Vision**

### **Air, Sea and Land Inefficiencies**

- Air cargo capacity (Egypt Air and competitive carriers) is lower than demand in high season due, in part, to GOE restrictions limiting flights, and the lack of "open sky" policies for air cargo. Also the bulk of Egyptian imports arrive by sea and quantities of inbound airfreight are proportionally small. Air freight rates are higher as a result.
- Air cargo facilities are insufficient to handle the volume of air cargo exports, though a new perishables terminal is under construction and a new dry cargo terminal is being planned at Cairo airport.

- Egypt Air maintains monopoly rights in the provision of airport services, and Egypt Air and EAS control cargo handling fees that are excessively high. Also, the Cairo Airport Authority limits the ability of carriers to exchange ground handling equipment, which increases handling costs.
- Shortage of refrigerated trucks due to high import tariffs on truck components, including tires, and GOE regulations restricting non-Egyptian truck operations in Egypt. This results in higher truck rates for exporters.
- Mechanically unsound and unsafe trucks are reassembled from legally imported used parts and “chopped” trucks.
- Inadequate truck driver training adds to inefficiencies, i.e., breakdowns and accidents.
- Truck services are not sufficiently competitive due, in part, to inadequate information on truck availability and rates.
- Direct service by sea to several European markets is not available, and carrying capacity is inadequate to virtually all markets. Because the frequency of calls by large container ships to Egyptian ports is relatively low, Egyptian exporters must ship by feeder vessels to non-Egyptian hub ports, which adds time and cost to the haul.
- Privatization of port services (authorized by Law #1, 1998) has not moved quickly, and quality of services available from public companies is often weak. Privatization and private reinvestment is permitted for container terminals, but financial and other barriers to entry have prevented private entry.
- Though MEFT Decree 106 of 2000 improved the import inspection process and reduced container dwell time to less than 15 days, the dwell time remains high relative to European ports, which typically clears a container from the port within 2 days.

#### **High Quality Seeds and Planting Material**

- Most producers are unable to obtain the best seed varieties and planting materials on a timely basis due to GOE import and other restrictions, except for large producer/exporters who can obtain MALR exemptions on a select basis.
- Required variety testing and registration before seeds can be produced or introduced and marketed. Vegetable seeds testing has been improved to one year of testing required for greenhouse production and two seasons for open field production.
- Phyto-sanitary provisions of the plant quarantine regulations pertaining to planting materials and seed imports. Planting materials, especially fruit stock, are subject to lengthy quarantine that often results in contamination of the stock.
- Production and marketing of seedlings, root stocks, etc. is essentially unregulated which has resulted in the production and marketing of mislabeled material by unscrupulous nursery companies. HEIA is establishing a grape stock nursery that will alleviate the problem.

#### **Effective and safe pesticides**

- Though MALR Decree 663 of 1998 was intended to improve the registration process by reducing the testing period for pesticides and enhance transparency it has not been fully implemented and many problems remain. The onerous registration system has hampered

timely access by farmers to many effective pesticides. MALR established a “Me-Too” registration process (EPA designed system to improve the registration process for pesticides similar to those previously registered in Egypt), but the modified system does not adhere to EPA procedures, and has permitted the registration of numerous products that have not been adequately tested.

- The EU is reviewing all 823 active ingredients approved within the EU prior to 1993 to determine a positive list of approved active ingredients. The review to be completed by July 2003 will result in the establishment of Maximum Residue Limits (MRLs) for every approved crop/chemical combination. It is likely that only 250-300 of the original 823 active ingredients will be approved. If Egypt continues to use active ingredients that are not approved and for which no MRLs are established, exporters will lose access to EU markets.
- Large producers/exporters can receive special exemptions from the Minister of Agriculture to import and use the products on export crops. These pesticides are imported exclusively through EMIPAC, which controls pricing.
- Ministries of Health registration procedures for household pesticides are less restrictive than for agricultural pesticides. Many of these products are being sold in retail farm supply stores with labels that pertain only to agricultural uses. There is no coordination between the Ministry of Health and MALR.
- Regulatory problems mitigate against free and open trade of pesticides as all importers must apply annually for import quota. The process of allocation by MALR is not transparent and appears inequitable as it often favors GOE entities, e.g. military establishments that formulate and package, and local formulators over international companies that have local representation.
- Many of the approximately 4,000 pesticide dealers lack proper knowledge to safely handle and sell products as there is no regulatory apparatus to qualify, certify, and license dealers. Farmers are required to have a permit to apply pesticides but this regulation is implemented inconsistently.

### **Market information**

- Daily market information gathered from four wholesale markets and disseminated via newspapers and TV is useful but probably insufficient to make informed market decisions. Simple statistical and graphical analysis, e.g., seasonal prices, price-quality analysis, and seasonal planting estimates, could add value to users.
- Knowledge of international markets appears to be limited to major exporters; smaller and medium size traders and exporters lack understanding of international markets. GOE does not provide a user-friendly and up-to-date market information service for exporters.
- Egypt lacks a focused program of export promotion for horticulture products; EEPC has limited budget and broad sectoral mandate.

### **Foreign Direct Investment, Local Investment and Technology Transfer**

- GOE extension services are inadequate to assist horticulture producers. All major exporters and some domestic food processors have their own extension or farmer monitoring systems to initiate and/or ensure use of appropriate inputs and farming techniques. Extension services are typically provided either through formal contracts or purchasing agreements.

- Post-harvest losses are as high as 40% for some products from field harvest through retail distribution. These losses result from lack of proper packing for transport, lack of adequate cold storage for grading and packing activities, and lack of adequate refrigerated transportation facilities.
- Information about potential new products, processing techniques, and opportunities to add value to horticulture need to be disseminated, particularly as the number of Egyptians buying processed or “convenience” foods increases.

# Agricultural Sector Institutions

## Vision

*Private and Public Sector Institutions together promote domestic and foreign direct investment, generate employment, and raise incomes in the agricultural and agribusiness economy.*

- *Private sector agricultural institutions -- firms, associations, cooperatives, farmer groups -- are experiencing rapidly increasing revenues and employment needs as a result of expanded products and services in extension, pest management, mechanization and farm management.*
- *Public sector agricultural institutions -- government and universities, research, extension, inspection and quality control -- are providing a world-class legal and regulatory structure to promote private sector investment, employment generation, exports and value added in agriculture and agribusiness, while protecting the environment.*

## Why is this Vision Important?

1. **Employment.** Agricultural sector institutions -- public and private -- directly or indirectly provide between 50 and 60% of all employment in Egypt.
2. **Increased Investment, Increased Productivity of Workers.** Liberalization and privatization lead to overall employment increases after an initial transition. Privatization and liberalization lead to increased investment and productivity of workers. In rice milling, for example, initial results from an RDI study show that with liberalization of the sector, overall employment seems to have risen about 25% since the early 1990's, in spite of job losses in the public sector.
3. **Growth in Private Agricultural Services.** The market for private agricultural services in extension, pest management, mechanization, and farm management is growing fast and is providing jobs and incomes for many poor Egyptians.
4. **Encourages Investment in Productive Sub-Sectors.** The appropriate allocation of government resources to activities that are the proper province of government encourages investment in productive sub-sectors. Examples are RMGs, rice milling, wheat milling and pest management.
5. **Maintaining Egypt's Competitive Edge for Fresh and Processed Foods.** Basic and applied research on agriculture and agro-processing will maintain Egypt's competitive edge in world markets for fresh and processed foods.
6. **Encourages Technology Transfer.** Technology transfer is the key element in increasing productivity in both agricultural production and in processing of agricultural products for domestic and export sales.
7. **Strengthens Role of Private Associations and Rural Organizations.** The NGO community is weak in rural Egypt, and the regulatory environment currently restricts the development of these institutions. Private associations and rural organizations are crucial to public/private policy dialogue and to information

management and dissemination, as well as to efficient technology transfer. Cooperatives, Water User Associations, and Community Development Associations have great potential to empower and enrich their members.

## **Progress on Agricultural Sector Institutions**

- **Cotton Pest Management**: The MALR is working with private sector pesticide traders and agricultural cooperatives to transfer responsibility of all cotton pest management to the private sector. Ministerial Decree provides that farmers make all decisions regarding cotton pest management and that they have a choice of service providers. The cotton pest management program is currently implemented in 8 governorates and will be implemented in all cotton-growing governorates within the next two years.
- **Egyptian Seed Association**: In the past five years the Egyptian Seed Association (ESAS) has become a powerful association in the area of policy reform and liberalization of the seed sector. It works with the government to redefine the roles of the government and private sector in the seed industry. The association's goals are to build an internationally competitive and private seed industry, which attracts foreign direct investment, engages in strategic alliances and joint ventures with foreign partners, and provides the most modern seed technologies to the farm community.
- **Pesticide Traders Associations**: Two pesticide traders' associations, Crop Life Egypt and the Egyptian Seed and Pesticide Traders Association (ESPTA) are working together to implement a pesticide dealers' certification program in cooperation with the MALR, GTZ and RDI. The program is designed to train its members in proper handling and trading of pesticides, and will facilitate its members to pass the expected MALR examination to license pesticide dealers. These associations have also developed codes of ethics, and are working to develop policy advocacy strategies in the area of pesticides.
- **Research and Extension Program**: The MALR extension services are working with HEIA to incorporate private sector concerns into public extension. The program, currently in five governorates, links exporters of horticultural products to small-scale farmers (individuals and groups). HEIA is conducting training in Good Agricultural Practices for extension personnel and farmers. The objective of this program is to increase exports and to spread the benefits of exports to small-scale farmers.
- **Agricultural Commodity Councils**: The Agricultural Commodity Councils (ACCs) were formed by Ministerial Decree in 1998. The role of the councils is to act as a private sector link to the GOE, focusing on policy advocacy in order to increase exports of agricultural commodities. The ACCs have worked with the GOE to establish policies regarding export quality of peanuts, potatoes, and fish and shellfish. In addition, the sub-committee on organic agriculture is working to establish the regulations on what constitutes organic agriculture in Egypt.
- **Cooperatives**: The MALR conducted a pilot program with RDI assistance in Assiut and Mansoura to remove all government-paid technical staff from cooperatives, and to eliminate government-nominated members from Cooperatives boards. In addition, HE Minister of Agriculture has approved a new strategy to

transform cooperatives into independent, private, profit-oriented institutions that provide inputs, marketing channels, a voice in policy advocacy, and any additional services identified by cooperative members.

## **Objectives that Contribute to the Overall Vision**

1. Strong private associations promote the interests of their members without creating cartels or monopolies. They work through: 1) policy dialogue with government; 2) market development; and 3) information collection, analysis, and dissemination.
2. GOE channels support for export development through private commodity and sub-sectoral associations.
3. Public sector institutions (research, extension, inspection and certification, licensing, and information services) are restructured and staffed to support private sector efforts to generate jobs, incomes, exports from the agricultural economy.
4. Public sector institutions protect agriculture from environmental contamination and the environment from contamination by bad agronomic practices.
5. Bank and non-bank financial institutions provide the full range of financial services on a competitive basis throughout the country. These services include: 1) long, medium and short-term credit; 2) savings mobilization; and 3) investment advisory services.
6. Public sector management applies private sector management principles -- delegation of authority; decentralization; and autonomy -- while protecting and promoting national interests.
7. Farmers make cropping pattern decisions based on readily available information about costs of production, potential net returns to cropping decisions, and reliable marketing options.

## **Constraints to Achieving Objectives and Overall Vision**

### **Public Sector Institutions**

1. Public sector institutions need improved regulatory enforcement power, and face confusing and sometimes contradictory laws, regulations, decrees, and instructions. This can create confusion and a lack of investor confidence.
2. Public sector institutions have, in general, under-trained staff and under-equipped facilities. In particular, these institutions lack qualified management trained in information technology.
3. Public sector institutions have top-down centrally planned management habits. They lack experience working with the private sector.

4. Public sector institutions are often over-staffed, and with progress in liberalization and privatization, many are concerned about the future of their own positions. Employees are poorly paid, and sometimes resort to rank-seeking opportunities.

### **Private Sector Institutions**

1. Many profit-oriented institutions -- firms, farms, partnerships, etc., -- fear competition due to a lack of up-to-date and accurate market information as well as experience in marketing. Proper business practices are essential in order to operate comfortably and profitably in a private sector led economy.
2. Private companies are wary of state intervention in their business practices due to 30 years of state planning and control. They also face confusing and contradictory laws, regulations, decrees, and instructions.
3. Non-profit organizations are subject to GOE over-regulation, intervention, and control.
4. Non-profits tend to focus on a narrow set of specialty interests. They lack experience in policy advocacy and experience in dialogue and negotiation with the government.

# Agricultural Cooperatives

## Vision

*Cooperatives are member-led economic enterprises based on optional membership, working in a market economy, representing the interests of its members.*

*Cooperatives are primary means farmers use to gain access to new ideas and advanced technologies. Cooperatives operate within a legal framework that protects its capital and enables them to manage financial resources as a private enterprise. Members elect cooperative leaders.*

## Why is this Vision Important?

1. **Access to quality supplies and services at reasonable cost.** By banding together and purchasing agricultural inputs and services as a group, farmers offset the market power advantage of middlemen providing those supplies. Buying in bulk, farmers have access to volume discounts and are able to negotiate from a position of greater strength for better delivery terms, credit, and other arrangements. The larger the number of farmers purchasing supplies and services through the cooperative, the greater the potential for savings. And the more each individual member uses the supply operation, the more he or she may save over doing business elsewhere.
2. **Increased clout in the marketplace.** Marketing on a cooperative basis permits members to combine their strength while maintaining their status as independent growers. They can lower distribution costs, engage in group contracting with exporters, and deliver their produce in the amounts and types that will attract better offers from purchasers.
3. **Access to export markets.** Through cooperative marketing, members can share information and negotiate with buyers from a position of greater strength and security. They can also develop processing facilities by themselves or as part of a joint venture with other cooperative or non-cooperative firms.
4. **Alternatives to traders.** Cooperatives work to the benefit of farmers in ways that traders cannot. Specifically, profits accrued from cooperative activities return back to the farmer-members as either increased shares, dividend returns, or improved services. Purchasing inputs or selling produce to traders may provide the farmers with some income, but potential earnings are limited as profits are siphoned to outside businessmen. Additionally, growers often view cooperatives as providing higher quality services than traders.

## Progress in Agricultural Cooperative Reform

1. **Governmental support of cooperative reform.** Ministerial Decree 1658/2001 formed the cooperative reform committee, a specialized committee designed to provide a channel for dialogue between all stakeholders concerned with cooperative reform. The committee submitted a policy for reform of the agricultural cooperative system to the Minister of Agriculture, and Minister Wali approved this proposal November 2001. The approval of this reform policy by Minister Wali is a strong positive indicator of the government's support of cooperative reform and autonomous development within the liberalized agricultural sector.

2. **Promoting cooperative autonomy.** With the launch of APRP's cooperative reform project, Minister Yusef Wali has agreed not to appoint any members to the boards of directors of governorate-level cooperatives. This decision was finalized in a memorandum submitted to Dr. Yusef Wali by Dr. Saad Nassar, the Chair of the Agricultural Research Center and Director of APRP, 29 January 2001.
3. **Improving the managerial capacity of cooperatives.** The Ministry of Agriculture is making preparations to remove government-paid technical staff from the cooperatives. In order for this to be effectively accomplished, however, managerial staff and the board of directors of cooperatives must have a clear understanding of their roles and responsibilities in operating effective and profitable cooperatives. APRP has therefore been working with the Central Authority for the Administration of Cooperatives (CAAC) to train cooperative board members and staff in financial and project management.

## Objectives that will Contribute to the Overall Vision

### Cooperative autonomy

1. **Cooperative independence from the government consolidated.** Government control of cooperatives in Egypt has traditionally entailed various forms of financial and managerial support. It has also, however, served as an excuse for government interference and this, in turn, has been an excuse for the non-accountability of management and the discounting of farmers' views. The government should play an active role in cooperative reform by focusing technical assistance and available financial support on strengthening local cooperative management capacities and enabling cooperative self-reliance to become a reality.
2. **Cooperative organizational structure decentralized.** Budgets, input prices, and input distribution networks are all centrally controlled at the governorate level at this time. Local cooperatives should have the prerogative to determine their own budgets, set their own prices, and purchase inputs from whomever they choose.
3. **Cooperative Law 122/1980 substantially amended or replaced.** Legislation has a major impact on the operation of cooperatives and this can be negative or positive. A new cooperative law will allow for cooperative autonomy from the government and provide for direct financial and managerial independence for local cooperatives.

### Strategic and financial management

1. ***Cooperatives hire their own managers to run the cooperatives. If current employees do not possess the necessary qualifications, leaders should hire new staff who are capable of ensuring cooperative viability and providing services members require.***
2. ***Cooperatives learn from others' successes. Cooperatives that have become profit-oriented, sustainable associations serve both as an example to those struggling to survive in a liberalized environment and as a blueprint on how to do so. Local governmental authorities should work with cooperatives to identify those cooperatives that have succeeded, and highlight their success stories both at governorate- and district-level General Assembly meetings.***

3. *Cooperatives improve through trainings, seminars, and workshops. The central cooperatives need to fulfill their mandate to provide training and extension to improve cooperative leadership and management at the village, district, and governorate levels.*

## **Financial Solvency**

1. **Cooperatives diversify activities beyond input provision.** Strengthening member services through successful cooperative entrepreneurship is a precondition for cooperative survival in an increasingly competitive market. Diversifying activities is also key to ensuring financial sustainability. Qualified and competent cooperative management should deliver services which meet the economic and social needs of their members.
2. **Central cooperatives establish governorate-level funds** to benefit weaker local cooperatives and facilitate the improvement and expansion of activities of all cooperatives. Several governorates have already had positive experiences in this activity, and their examples benefit other central cooperatives in undertaking similar activities.

## **Constraints to Achieving Objectives and Overall Vision**

1. Due to half a century of financial and organizational control by the government, many cooperative leaders are finding it difficult to reorient themselves toward the pursuit of efficient and profitable services. They are reluctant to relinquish governmental support, and it will require time and awareness-raising to change the mentalities of cooperative leaders and managers.
2. It will also be a challenge to change the attitudes of public-sector staff concerning their role in the cooperative system. MALR must work with the Central Authority for the Administration of Cooperatives (CAAC) to redefine their mission and priorities. This entails a shift in approach from direct oversight and control to specific and limited support, including technical assistance and legal oversight.
3. Decentralizing authority from the central to local cooperatives will require a commitment on the part of the government and central cooperatives to allow for greater autonomy at the village level. This commitment may be hard to come by, as governorate-level leaders may resist a devolution of power.
4. Decentralization also requires capacity and motivation on the part of local cooperatives to develop the internal capacity to conduct their own financial planning independently of the central cooperative. Many cooperatives do not have this capacity at this time.
5. Funding continues to pose a significant obstacle to cooperative progress. A lack of access to start-up capital is rooted in inefficient business practices, ineffective financial management, low landholding fees, lack of access to credit, and imperfect input distribution systems. Because the roots of financial insolvency are deep and wide-spread, all stakeholders must work together to determine how cooperatives are to survive the transition to financially self-sustaining associations. Unless they can adjust to the new conditions and become more financially self-reliant, many will simply disappear from the scene.

6. Little interest has been shown in amending or replacing the Cooperative Law both within the People's Assembly and in CAAC. The cooperative system provided for in Law 122 no longer describes the current realities, nor does it reflect the MALR's stated commitment to cooperative reform. This law regulates all activities of cooperatives vis-à-vis the government, and working within the rubric of this law makes independence virtually impossible. Until the legal system governing cooperatives is altered, cooperative reform will be slowed significantly.

# Land

## Vision

*Landowners have full property rights. Owners, users, occupiers or tenants of old and new lands cultivate as they wish and owners buy, sell or rent land at will and at prices derived from free market conditions.*

## Why is this Vision Important?

1. **Maximizing Use of the Land.** Full property rights ( i.e. buy, sell, lease, use as collateral, leave as heritage, sub-divide or maintain intact, rent or lease, etc.) in land are essential for maximizing use of the land. Currently, the legal status of land holding in the old lands is ambiguous, as registration is many generations out of date. Farmers are unable to prove that they own land, and in some cases this makes buying, selling, or renting land difficult, even though it is legal to do so. With a good cadastral system, farmers will be able to put the land to its highest valued use. Full property rights and freedom of choice are important factors for raising incomes and investment, and creating jobs through high value production agriculture. Property rights to land affect more than 25 million people on 3.5 million holdings (7.1 million feddan of land). Almost 21 million people are members of land owning families, and about 5 million are non-land owning farm labourers.
2. **Title to Land will Increase Investments and Create Jobs.** Full property rights, that is, title to land, will allow access to medium and long-term credit, increase investment in agriculture and create jobs. Farmers in the new lands are “occupiers” only, that is, they have no title. The market value of land given to small scale farmers in reclamation projects is zero. Efforts expended by graduate farmers produce no more value for them than the net revenues derived from crop production. This fact reduces incentives to invest. The capital frozen in new lands that are allocated to graduates has an estimated potential asset value of LE 15.7 billion. Over 500,000 people (the “occupier” families) are directly affected by the absence of property rights, and this does not include the numbers of people who are not hired because of low investment rates in graduate lands.
3. **Enormous Multiplier Effects.** The multiplier effects of large scale investments by single companies or joint ventures in land reclamation projects are enormous. The GOE estimates that between 8 and 15 jobs are created for every ten feddan reclaimed. Large investor farms account for a larger and larger share of horticulture exports. Full exploitation of this land will more likely occur with improved procedures for titling. Land used as collateral will facilitate the financing of investments for more jobs, greater exports, and higher incomes.
4. **A Land Market is Fundamental to a Private Sector-Led, Market Economy.** The new land law of 1992 has gone a long way towards establishing full property rights to old lands. The GOE should be applauded for taking this bold and courageous step. The policy reforms in the late 1980s which stopped most mandatory cropping requirements have contributed greatly to increased incomes and investment in agriculture. Yet, much more has to be done, especially in the area of regulatory reform. With certain relatively easily defined reforms, complete property rights can be established for all lands, and out of that a true land market is possible. The economic growth potential from a free and well-functioning land market is enormous.

## **Progress on Land**

- The MALR successfully implemented Law 97/1992, the New Land Law. RDI Unit worked with an official from the Agricultural Economics Research Institute on two studies to monitor implementation of this important law. The studies concluded that “reconciliation committees” were highly instrumental in resolving conflict between landowners and tenants. Most conflicts were resolved peacefully. Following implementation of the law, land rents rose and fell according to market demands.
- The RDI Unit and GARPAD conducted a study on the New Lands Policy. The study concluded that improved investment in new lands, particularly in the Graduate Programs, would occur if Graduates were permitted to purchase land on an accelerated schedule (now graduates must pay for a mandatory 30 year period before title is granted).
- The RDI Unit and AERI conducted a study on means to speed up the process of titling of Old Land. Proper titling is needed for the development of a land market. The study suggested implementation of a pilot project to consider the use of agricultural unit (village) land records to facilitate proper registration of land. These data are up-dated every three years by mandate of the Ministry of Agriculture. The Ministry of Justice, which oversees land registration, and the Ministry of Water, which houses the Egyptian Survey Authority, would need to cooperate with the MALR to conduct the pilot program.
- The Economic Affairs Sector instituted a program to collect cost of production/farm budget data. The program works in most of the Nile Valley and the Delta. It is for the purpose of providing information to improve crop decision and to improve policy making. As this information is released to farmers, we can expect improved farmers decision making, which will improve the productivity of land and water.
- The MALR and the MWRI are implementing the “matching irrigation supply and demand” program in close to one-half the areas in the Nile Valley and the Delta. This is an information system in which the MALR obtains information from farmers on current and expected crop production. The MALR aggregates these data on a canal basis and delivers them to the MWRI so that the amount of irrigation water delivered matches the demand for water. This information will improve crop production and land and water productivity.

## **Objectives that Contribute to the Overall Vision**

1. Land is registered in the name of the current owner in land registration departments in each district. (This means the establishment of an up to date cadastral system, which will require close coordination among the MPWWR, the MALR, and the Ministry of Justice.)
2. Graduates get title to land through a mortgage system. With full property rights they will buy, sell, or rent land without government controls.
3. Investors receive title to land immediately upon payment. This land can be used as collateral for loans.
4. Farmers can produce fruit trees anywhere in the Nile Valley and the Delta.
5. The MALR has an effective information system targeted to farmers on costs of production, estimated future prices and returns to production so that farmers are better equipped to make decisions in a liberalized economy.

## **Constraints to Achieving Objectives and Overall Vision**

- 1. The cadastral system in Egypt is out of date. While mapping of land parcels is occurring, there has been no attempt to match individual pieces of land with owners. The legal status of ownership is not well defined due to the reluctance of inherited individuals to correct their legal status with respect to the land which they owned. RDI studies on land tenure show that the inadequate cadastral system constrains the development of the land market. The current system is also inadequate as a base for assessing agricultural land tax.**
- 2. GOE policy towards graduates on new lands prevents them from receiving title to the land for 30 years after they take possession. Investors receive title after cultivating the land for three years, and not immediately upon payment of the land. These frozen assets are worth billions of pounds.**
- 3. Land and water management should be closely coordinated to serve agricultural objectives. Information on cropping pattern decisions need to be made available to those responsible for delivering water. Provision of water, in some cases, prevents flexibility with respect to cropping patterns. This constrains the possibility of market-based decisions to cultivate rice, for example. The development of an information system on cropping patterns is therefore essential.**
- 4. The “varietal map” requires that certain varieties of cotton are grown in certain Governorates. Farmers have little or no say about what variety to grow. This prevents farmers from growing varieties which may provide them with higher net revenues.**
- 5. The GOE has no information system targeted to farmers to improve their decision making for crop production.**

# On-Farm Water Management and Conservation

## Vision

*Farmers are managing on-farm water efficiently and applying improved techniques. Water conservation is a high priority for both MALR and MWRI. They are working together to deliver water when needed in sufficient amounts.*

## Why is this Vision Important

1. **Conservation of Water as a Scarce Resource is a Necessity.** Egypt's share of Nile water is fixed at 55.5 billion cubic meters of water annually, as determined by international law. Water needs to be conserved and managed properly to ensure sustainable use and continued availability for future generations. The demand for water is rising quickly as Egypt's population continues to grow, and Egypt's agricultural strategy includes increasing agricultural productivity by reclaiming desert lands for cultivation.
2. **Farmers are Making Cropping Decisions, and They need to be Assured of the Supply of Water when it is Required.** In the past, before liberalization of the agricultural economy, farmers grew crops according to a government plan. This plan specified which crops were grown in which areas of the country, and at which times of the year. Today, with policy reforms implemented to liberalize the agricultural economy, the cropping pattern is no longer mandated. This change has resulted in a much more complicated farming system with differing water demands. Best estimates of cropping patterns are no longer enough to determine farmer water needs as information is no longer precise with respect to where certain crops are planted, nor when planting occurs. As a result, from time to time excess water is delivered, or irrigation water is delivered in insufficient quantities and at the wrong time.
3. **Efficient Water Management Guarantees that Water Supply Meets Demand water demand.** Unexpected water irrigation shortages lead to decreased productivity as well as water waste elsewhere in the country. MWRI's capacity to deliver water when needed is contingent on correct and real-time information from farmers. Expansion of the MISD program throughout the country will guarantee that water supply meets water demand.
4. **High Return per Unit of Water is Required. Thus, Varieties that Consume Less Water with High Yields can Increase Productivity.** Many new crop varieties that consume less water or that have short-duration characteristics are being introduced by MALR. Many of these varieties are high-value horticultural crops. This ongoing research by MALR therefore helps increase productivity and farmers' incomes while minimizing the water requirements for agriculture.
5. **Efficient Water Conservation Enables more Horizontal Expansion.** On-farm water management and conservation improves water use efficiency, helps improving soil productivity, and enables more land reclamation.
6. **Water Management Promotes Inter-Ministerial Collaboration and Better Management of Nile water in Low Flood Season.** Due to the importance of water management to both MALR and the Ministry of Water Resources and Irrigation (MWRI), collaboration and co-ordination is essential. Water management and conservation programs are forming strong

links of cooperation between the two Ministries, guaranteeing that the work of MALR and MWRI do not conflict or overlap.

## **Progress in On-Farm Water Management and Conservation**

### **Matching Water Supply and Demand**

The MALR and MWRI together initiated the Matching Irrigation Supply and Demand (MISD) program in 1999. Though water scarcity is currently not a problem because of high floods in recent years, this situation is not likely to last, especially as the demand for water increases considerably every year. To overcome this problem, the MWRI needs continuous real-time information from farmers on their planting decisions in order to supply the required quantities of water at the right time. The MISD program developed by the two ministries responds to the anticipated water shortages proactively. The activity's overall objective is to obtain information from farmers on which crops they are growing and which ones they intend to grow, and deliver that information to the MALR, which will in turn provide the data to the MWRI. The MISD information system is designed to provide data on the demand for irrigation water at the canal level.

- ***Real-time information now available for 3 million feddan, half of all arable Old Land.** In 2002, the number of feddan covered in the information systems collection more than doubled, and real-time reliable information now exists for 69 districts (from an original five in the pilot program). This is nearly 3 million feddan, half of all arable old land in Egypt. Creating a real-time information system on actual and anticipated crops grown in the field is enabling MWRI and MALR to estimate water requirements at every canal, and has succeeded in matching irrigation supply with demand across the country.*
- ***Awareness raising of farmers, extensionists, and government officials promoted.** Through the activities of MALR and MWRI, with RDI support, field staff and farmers alike have become more aware of the need to improve the water management and conservation efforts through participation in MISD. Workshops have taken place in 18 governorates and are continuing to expand.*
- ***More than 6000 individuals trained in data collection techniques.** The field extension officers are the heart of MISD information-gathering activities. The quality of the data obtained depends on their abilities and dedication to the program. Training and public awareness for extensionists has led to the training of trainers, and it is expected that field extension officers will complete their training in the near future.*
- ***Computer training now covers 50 Agricultural Administration Units in 69 districts.** These training sessions instruct agriculture engineers in how to use the software program developed specifically for MISD to produce reports on the area of each crop planted (or expected to be planted) on each canal. These reports are transferred to the district irrigation engineers.*
- ***MALR-MWRI Collaboration.** APRP took a lead role in promoting cooperation between the ministries vital for a successful water conservation and management program. Now the two ministries are working together to deliver water to farmers at the right time and in sufficient quantities. Collaboration between MALR and MWRI has led to a real-time information system on actual/anticipated crops grown in the field which will in turn be used to estimate water requirements at every canal.*

## *On-Farm Water Conservation and Management*

*Rice and sugarcane are well known to be the most water consuming crops in Egypt. The MALR and MWRI are successfully collaborating together to implement policies that could preserve water resources without a significant impact on the production of these two crops. RDI has supported the efforts of the MALR and the MWRI to work together to encourage and facilitate the replacement of long-season rice varieties with short-season varieties throughout the Delta to help reduce the water consumption of rice. In addition, the two Ministries introduced the gated pipe on-farm system to sugarcane growers in Upper Egypt through a pilot program. This new technology has not only reduced the consumptive use of water, but it has also resulted in increased yields.*

- **New Short Season Rice -- Significant Water Savings.** RDI has worked with MALR and MWRI to reduce irrigation water requirements on rice by encouraging farmers to grow short duration rice varieties in the Delta and adapting water deficiencies to a shorter rice growing season. Short duration rice uses 15-20% less water, leading to water conservation and increased land productivity by allowing farmers to grow a crop in the Nili period (between summer and fall). The rice program began with a small trial in 1998 of 500 feddan, which was expanded in 1999 to over 6,000 feddan, and reached approximately 60,000 feddan in 2000. The MWRI monitors water utilization and has verified that planting the rice varieties along with appropriate changes in water distribution frequencies and dates saves about 15% of water consumed.
- **Collaboration between the Two Ministries Institutionalized.** RDI has given considerable priority to facilitating the interaction and coordination between the two Ministries, their field staffs and headquarters operations. This coordination has worked well, and significant water saving has resulted from the collaboration between the two Ministries. Representatives of both Ministers agreed on the six major canals along which 60,000-plus feddan will use short-season rice varieties. This kind of communication and exchange demonstrates that the collaboration between the two ministries is institutionalized and permanent.
- **Significant Expansion of these Varieties.** Since the program of testing and extension of short-season rice varieties began three years ago, the area planted to these varieties has undergone a dramatic increase. In 2000/2001 season, the MALR estimates that 1.5 million feddan were under rice cultivation. Of this, 1.3 million were with short season varieties. This increase translates into water savings of over one billion cubic meters. Furthermore, the short-season varieties, developed by the Field Crops Research Institute and the Rice Research Institute of the Agricultural Research Center of the MALR, offer yields, milling, and eating qualities comparable to or superior to long season varieties.
- **Rice Water Duties Changed.** Due to the introduction of short-season rice, rice water duties (time intervals of deliveries) will be changed for the first time. Savings from this program may then amount to as much as two billion cubic meters -- this is the quantity of water required to fully utilize the El-Salaam Canal in Sinai.
- **Rice Working Group and Sugarcane Working Group.** To assist these ministries, RDI established a Rice Working Group and a Sugarcane Working Group in 1998. Their mission: To review policy issues related to water scarcity for rice and sugarcane plantations in Egypt. These groups included experts from the Central Administration for Water Distribution (CAWD/MPWWR), the Sugar Crops and Rice Research Institutes (ARC), the Agriculture Engineering Research Institute (AERI/ARC) and the RDI and EPIQ components of APRP.

- **The Sugarcane Gated Pipe Program**. MALR and MWRI have worked to improve on-farm water management efficiency through laser-leveling programs and improved irrigation systems (gated pipes). This has taken place in the main sugarcane growing governorates of Luxor, Qena and Aswan, and has resulted in reducing on-farm water requirements for sugarcane by 15% and in increasing sugarcane yields by 25%.

## **Objectives that Contribute to the Overall Vision**

1. Country-wide expansion of MISD to estimate water demand.
2. Speed up expansion and funding of new irrigation techniques (e.g., gated pipe).
3. Continue research and applications of short-duration varieties that consume less water.
4. Continue and expand good cooperation between MALR and MWRI.

## **Constraints to Achieving Objectives and Overall Vision**

1. More efforts are required by MALR and MWRI to develop a common set of policies that ensure that efforts do not overlap or conflict.
2. MALR and MWRI have not worked out a detailed action plan, nor have they put in place the required incentives for implementation.

# The Seed Sector

## Vision

*The seed sector is competitive and able to provide Egyptian farmers with high quality seeds of the best varieties in the world, expanding dramatically farm productivity, value of production, incomes, and exports. Private sector breeding, seed production, imports and exports are flourishing, with support from the GOE to ensure plant variety protection, voluntary seed certification, truthful labeling, and research.*

## Why is this Vision Important?

1. **Continued Increases in Agricultural Productivity.** Egypt's arable land is limited but its population continues to swell. Continued increases in agricultural production will need to come from higher productivity and the production of higher value crops on this limited land. Recent history in Egypt and Asia (the Green Revolution) has shown that farmers can dramatically increase their production and incomes by planting seeds of new, improved varieties. Egypt needs an effective system to continue to develop and deliver the newest and best varieties to farmers through high-quality seed.
2. **Private Seed Industries Generally More Effective.** International experience shows that private seed industries are generally more effective than government ones in accessing, developing, and delivering the best seeds, for several reasons:
  - Competition among private companies serves as the incentive to develop and introduce more varieties than might result from a government program alone.
  - Competition among private companies to preserve the reputation of their company name and brands often proves to be a more effective safeguard and assurance of quality control than is possible to obtain in a seed industry that is run by a single government agency.
  - Private companies are more likely to access the best new varieties in the world, through commercial alliances with international seed companies.
  - When the private sector handles production, the government can better focus on basic research and enforcing standards through certification and plant variety protection systems.
3. **Agricultural Exports, Processing and Job Creation.** Wider availability and use of high quality seeds of improved varieties will positively impact agricultural exports, processing, and job creation. Export markets require specific varieties with specific characteristics (taste, color, etc), especially in horticulture, which is labor-intensive. Processing industries require varieties with specific characteristics (e.g., high percentage solids) that must be promoted by the seed industry.
4. **Governments Important Role in Plant Variety Protection, Voluntary Certification, Truthful Labeling, and Research.** Government can play an important role in the seed sector but regulations should not be allowed to stifle the development of private business or create unnecessary costs or delays. Voluntary certification will provide quality standards for those who need them. Plant variety protection will encourage more plant breeding and facilitate access to and trade in protected varieties (often the best international varieties). Continued government investment in research will result in more improved varieties to license to companies for multiplication and marketing.

## **Progress in the Seed Sector**

APRP, working in cooperation with the GOE and the private sector, has helped the seed sector-progress on several fronts, mainly in policy and regulatory reform.

- **The Establishment of the Egyptian Seed Association.** ESAS is a trade association representing most Egyptian seed companies. By working closely with ESAS on numerous policy and regulatory reform issues, APRP helped build the association's capacities in analysis and advocacy. APRP also helped ESAS in strategic planning and establishment of the Seed Industry Code of Ethics.
- **Public-Private Dialogue.** Regular and constructive dialogue between ESAS and the GOE on all major seed policy matters.
- **New Variety Release Policy.** Requires the MALR's Agricultural Research Center to license its new varieties to private seed companies for multiplication and marketing to farmers.
- **Variety Registration Process.** Partially simplifies the variety registration process for vegetable varieties, thereby making it easier and quicker for seed companies to register varieties imported from countries of the OECD (Organization for Economic Cooperation and Development). However, an amended seed law is still needed to further simplify the process.
- **New Variety Screening Policy.** Allows private companies to import small samples of many vegetable varieties to test and determine which are best suited for Egyptian farmers.
- **Plant Variety Protection Draft Legislation.** Meets UPOV standards. The law was recently passed by the People's Assembly in May 2002. APRP helped CASC to create a Plant Variety Protection Office to implement the law. On-going efforts are still needed to support this office.
- **Improved Climate for Private Business in the Seed Industry.** Before 1994, certified seed of wheat, rice, and fava beans was produced exclusively by the GOE. Today, more than twenty private companies produce these seeds, supplying over 30% of the market. Fifteen private companies produce maize seed, covering 80% of that market. Six private companies now own their own seed processing plants and many have created their own distribution networks. Progress has occurred, but much more needs to be done...

## **Objectives that will Contribute to the Overall Vision**

1. An expansion in the number of new varieties sold as seeds in Egypt, increasing farmer choice and access to the best varieties available in the world. The number of private companies investing, producing, importing, and exporting seeds expands significantly, expanding competition, new variety dissemination, and job creation. The number of farmers planting high-quality seeds of the best varieties expands, expanding productivity and incomes.
2. Acceptance and implementation of a liberal policy and clear division of roles between the private and public sectors in the seed industry. The public sector will be engaged in research, certification, plant variety protection and facilitating and encouraging private investment in the sector. The public sector is not involved in seed production and

distribution beyond the breeder seed stage. The private sector engages in production, import, export, marketing and promotion and some breeding. This vision is embodied in a new seed law.

3. The private sector, represented by its trade association ESAS, participates as a partner with the government in the seed policy decision process. The GOE is represented by a single seed policy body. The GOE and the private sector work together to review and simplify seed regulations and procedures, with an eye to encouraging trade and investment.
4. Registration of new varieties is made quick, easy, and inexpensive to expand the number of improved varieties available to Egyptian farmers.
5. Certification is made voluntary – a service offered by the GOE to seed companies that want a mark of quality on their products, rather than a burden that increases the costs of all seed production.
6. The GOE maintains or expands its investment in research and plant breeding, focusing on developing varieties that meet market and farmer needs. Research results are shared with the private sector through Cooperative Research and Development Agreements and variety licenses.
7. The GOE passes a Plant Variety Protection (PVP) law that meets international standards established by the International Union for the Protection of New Varieties of Plants (UPOV). The GOE implements the law through a Plant Variety Protection Office that issues PVP Certificates in a simple, transparent way to eligible local and international varieties.
8. The Egyptian Seed Association develops as a strong institution effective in policy dialogue, as well as in trade promotion, trade conflict resolution, fostering linkages with international companies, and new technology dissemination.

## **Constraints to Achieving Objectives and Overall Vision**

1. Two government organizations – the Central Administration for Seed Production and the Horticultural Services Unit – continue to produce cotton, maize, wheat, rice, fava bean, onion and other seeds, often with indirect subsidies that create unfair competition and discourage private investment in producing these seeds.
2. The current seed law was passed in 1966 when the GOE operated under an economic ideology characterized by government production and heavy controls. Many of its provisions -- such as the government monopoly on cotton seed, mandatory certification, three years for registration, mandatory export licenses – constrain development of the sector.
3. Many in the GOE continue to regard private seed companies with suspicion rather than encouraging them to invest and expand their activities further in a competitive market economy.
4. Seed policy making authority in the GOE is currently spread over several committees. More rationalization of seed policies is needed.
5. The mandatory registration system delays, discourages, and effectively taxes the introduction of new improved varieties.

6. The mandatory certification system increases the cost of local seed production with questionable value-added.
7. Many Egyptian seed companies are still weak, with inadequate international contacts, inadequate experience in local production, inadequate internal quality control, and no expertise in breeding.
8. The Egyptian Seed Association remains young, still in need of a more secure financial base to expand its activities.
9. Public sector plant breeding efforts often suffer from flawed incentive systems, heavy reliance on donors for project support, and inadequate attention to market and farmer's felt needs.
10. The Plant Variety Protection Law needs to be effectively implemented and enforced, and Egypt has not yet joined UPOV.
11. Biosafety regulations are not yet fully defined, something that is important to allow the introduction of seeds of genetically enhanced crops, after food and environmental safety assessments.

# Pesticides

## Vision

*The private sector has access to latest product innovations, can freely respond to competitive market conditions, and can improve the capacity of private sector associations to achieve a self-regulatory role, while the GOE maintains the authority to regulate the import and distribution chain to ensure environmental and human health safety.*

## Why is the Vision Important?

1. **International Competitiveness and Public Safety.** Proper registration is important for international competitiveness and public safety. Pesticides are inherently dangerous and can have a profoundly adverse environmental impact. Recognizing that pesticides will be used, it is imperative that the GOE vigorously yet fairly regulate their importation and use. Good registration regulations, consistent with international standards, will make it easier for Egyptian farmers to export while maintaining a high degree of protection for people and the environment. A proper regulatory environment will allow for growth in exports of horticultural products, more jobs, and greater income generation.
2. **Continued Access to EU Markets.** This vision is made more important considering that the EU is reviewing all 823 active ingredients approved within the EU prior to 1993 in order to determine a positive list of approved active ingredients. The review is scheduled for completion by July, 2003. The review will result in the establishment of Maximum Residue Limits (MRLs) for every crop/chemical combination approved within the EU. It is estimated that of the original 823 active ingredients, only 250-300 will be approved. The impact on exported Egyptian products is obvious. If Egypt continues to use active ingredients that are not approved and for which no MRLs are established exporters will lose access to EU markets.
3. **Strengthens MALR Regulatory Role.** *The private sector provides an overwhelming majority of the pesticides used in Egypt. The GOE/CAPC needs to reposition itself as more of a regulatory body, and the CAAE should provide advice and not pest management services directly. Pest management services is a central area of reform in MALR and viewed by H.E. Minister Wally as vital for the future of the agricultural sector. H.E. has emphasized the need for growth in provision of pest management services by the private sector. The government has accepted fully that while it may relinquish responsibility for provision of services, its regulatory responsibilities to farmers and service providers remain important.*
4. **Eliminates/Targets Subsidies.** Pesticides are an integral part of the input package for all crops. The full liberalization of pest management services to all crops, including and especially cotton, will help eliminate the more than LE 125 million in subsidies that the GOE currently provides farmers for cotton pest control. (Provision of some subsidies that do not distort may remain, such as MALR-funded seed dressing.) Paying the full costs of pest control will move farmers towards using pesticides more judiciously, as shown in the pilot governorates.
5. **Improved Pesticide Handling and Application.** The network of pesticide dealers in Egypt numbers about 4,000. Many of these dealers lack the capacity to safely handle and sell pesticides, and to provide service and advice to farmers. As a result, pesticides are often used improperly and/or in excess with negative impacts on crop yields, human health, and the environment. At present no regulatory mechanism exists to assess the qualifications of dealers, and to eliminate those lacking a minimum level of skills from operating legally as pesticide dealers. A certification and licensing scheme established and administered by

MALR will eliminate dealers who are unqualified to sell pesticides, and will ensure that registered pesticides are used safely. A training program, conducted by the private sector and perhaps MALR, is a necessary input to prepare dealers to take a MALR test to receive certification.

## **Progress in Pesticides**

*APRP activities in the pesticide industry have concentrated in three areas:*

### **Pesticide Registration**

- Through the end of 2000, MALR had made steady progress to establish a fair and transparent pesticide registration process through implementation of Decree 663 of 1998. Improving the registration system, which had hampered timely access by farmers to many effective pesticides, had been the central topic of several joint MALR/APRP/CSPP workshops in the preceding 2 years. Though not fully implemented, the decree improves transparency of the registration process. MALR has also pursued related objectives to institute a “Me-Too” registration process (EPA designed system to improve the registration process for pesticides similar to those previously registered in Egypt), registration of bio-pesticides, and fingerprinting analysis which will precisely identify active ingredients. Following personnel changes in the Pesticide Registration Committee in late 2000, MALR implemented a modified “Me-Too” system that does not adhere to EPA procedures, and has permitted the registration of numerous products that have not been adequately tested.
- MALR attempted to close a loophole in the registration of household pesticides (through the Ministry of Health). Relabeling pesticides is illegal, and MOH registered pesticides were illegally relabeled to show agricultural pests. The loophole exists because the registration process in the Ministry of Health is much faster than in the MALR. A Ministerial Committee was formed to address this issue but progress has been limited.

### **Pest Management Services**

- Past GOE control of the cotton industry extended to pest control. APRP and CSPP (GTZ) staff have been working to transfer pest management services and responsibilities for cotton from the GOE to the private sector and to farmers. The result will be a market-driven industry in which farmers, cooperatives, and other private sector agents are responsible for cotton pest management. Farmers will be free to purchase pest management inputs and services in a competitive market of providers. The GOE would then be able to focus on its role as regulator/licenser to ensure safe and effective pest control, as well as for issuing technical recommendations.
- The program to date has allowed farmers to make their own decisions regarding cotton production and cotton pest management in eight governorates. When farmers have been properly trained in IPM and involved in the pest management decision making process, they achieve higher cotton yields and use fewer pesticides. The program begins at the senior MALR staff level at the governorate to ensure that the program is properly introduced.
- The initiative was implemented through a pilot program in 1999 in two governorates (Dakhaleya and Beheira), in eight villages; and in 2000 in four governorates (Menoufiyah, Dakahliyah, Kafr El-Sheikh, and Behira), in sixteen villages; and expanded in 2001 in the same four governorates to 51 villages. Planned activities for 2002 include expansion to four new governorates (Minya, Beni Suef, Sharkeya, and Gharbeya). MALR has been supportive of the activity and a Decree calls for complete transfer of pest management services to the private sector within three years. This transfer is possible in this time frame as the critical

mass of MALR field staff and private sector service providers is being developed to sustain the effort country-wide.

### **Dealer Training and Certification**

- APRP and CSPP (GTZ) have worked with MALR to initiate changes in the system governing the licensing of pesticide dealers. Change is needed to improve the safety of pesticide transportation, storage, handling, mixing, use, and disposal, both to people and the environment, and to improve the capacity of dealers to provide better services and advice to farmers based on MALR pest management recommendations. As of now, testing is not a requirement, but MALR agrees that the GOE must implement a scheme to test, certify, and license pesticide dealers. Crop Life Egypt (CLE), representing pesticide importers and manufacturers, and the Egyptian Seeds and Pesticide Traders Association (ESPTA), representing pesticide dealers, agreed to cooperate with APRP and CSPP to design and implement a training program to prepare dealers and applicators for MALR testing, certification, and licensing. CLE has offered to directly finance a portion of continued dealer training.
- APRP and CSPP agreed to support the associations in training a small cadre of trainers who will be capable of providing training courses to dealers. APRP and CSPP first produced a Dealers Technical Manual and a Manual for Trainers. Then a Training of Trainers (TOT) course for 25 trainer candidates from both Associations was held in Assiut in late 2001 and early 2002. About 20 of the 25 candidates were considered qualified to conduct subsequent dealer training. A second part of the TOT occurred in a pilot training course in Monsoura in mid-February, 2002. There 10 trainers offered the course to 15 dealers under the supervision of APRP and CSPP. A second pilot course was held for the other 10 trainers in Assiut in early March 2002.
- Two additional "refresher" TOTs will be held in April/May 2002 for the same 20 trainers -- one in the Delta and one in Upper Egypt. Two additional dealer pilot courses will be held following this next round of TOT. The training specialist for Crop Life International will attend one of these pilot courses, and discuss the possibility of funding additional courses through the association.

### **Objectives that will Contribute to the Overall Visions**

1. The development of a pest management services industry that is competitive and provides farmers with efficient and safe pest control. Farmers pay the full cost of their own pest control.
2. Pest control is based on Integrated Pest Management (IPM), and the MALR/CAAE takes the lead in training farmers in IPM, and providing advice to farmers on the best IPM practices for each crop.
3. The MALR/CAPC establishes clear regulations on pesticide registration and the testing, certification, and licensing of dealers and applicators. The regulations are consistent with international standards and are applied evenly and rigorously.
4. There is clear definition of the roles of the private sector (including companies, farmers and cooperatives) and the GOE. All involved in the pest management services industry agree and understand that separation of roles is vital to efficient and safe pest control.
5. The MALR/CAPC puts into place a monitoring system to ensure safe use of pesticides. The MALR and the MWRI will work together to monitor pesticide residues in water quality.

6. The registration process requires thorough product testing prior to registration of new products. If the pesticide has been previously registered in Egypt, all test documentation of these products must be examined and approved prior to registration.
7. Importers of Egypt's fresh fruits and vegetables are assured that proper pest control has been carried out in Egypt, that proper pesticides have been used, and that the produce is free of pesticide residues.
8. Egyptian farmers have access to the most effective pesticides and pest control technologies.
9. Pesticide dealers are able to safely handle and sell pesticides, and to provide good service and advice to farmers. Unscrupulous or dishonest dealers are eliminated from selling pesticides to farmers.
10. MALR retains the required regulatory role in testing, certifying, and licensing, while allowing the private sector to provide training to dealers. Eventually, the role of the private sector associations can expand beyond training to a self-regulating force in the industry working in concert with MALR's regulatory activity.

## **Constraints to Achieving Objectives and Overall Vision**

1. The MALR remains a provider of pest control in cotton and farmers receive subsidies for pest control at the rate of about LE 100/feddan. Turning cotton pest control over to the private sector and eliminating the subsidy requires complicated planning that is currently underway by Ministerial Decree that calls for transfer to the private sector within 3 years.
2. Decisions regarding pest management regulation are sometimes made outside the government's established protocol. This increases business risk, and means that some acceptable pesticides (from a scientific point of view) may not be available to Egyptian farmers.
3. The personnel change in the Pesticide Registration Committee in late 2000 hindered activities in pesticide registration (implementation of Decree 663 of 1998). The change also initiated a form of fast-track registration that has resulted in the registration of many pesticides prior to adequate testing. Thus the safety and efficacy of the registered products is not known until after the products have been commercially introduced.
4. Pesticide import licenses are granted annually by MALR based on MALR estimates of the volume of pesticides that farmers will need. With the advent of the fast-track registration system, the allocations have not been handled in a transparent and fair manner (e.g., pesticide import licenses are gained outside the MALR estimates of requirements).
5. No regulatory apparatus exists for testing, certification, and licensing of dealers and applicators. One agency should be made responsible for administering the test, issuing certification, and the necessary MALR licenses.
6. CLE and ESPTA lack the financial resources to expand the training program to reach all pesticide dealers in Egypt, and dealers will be unwilling to pay for training until the program achieves a greater level of awareness and is viewed as valuable.

# Improving Agricultural Statistics and Information

## Vision

*Agricultural information is readily available to farmers, exporters, traders, and government agencies. Up-to-date information is collected, managed, analyzed, and disseminated for all end users (hard copy and electronically). Both the government and the private sector provide information.*

## Why is this Vision Important?

1. **Information is critical to decision makers.** Information forms the basis of the free market economy. Improved quality of public information, and stronger educational outreach efforts to facilitate understanding and use of these data in decision making by the public and private sectors, are critical to agricultural policy and development.
2. **Farmers and others Need Timely and High Quality Information.** At present, farmers have little access to cost of production or farm income data to help them make production decisions, and their ability to utilize available data is limited. Now that the government does not make production decisions for farmers, farmers as well as other parties need timely and high quality information so that land, water and other factors of production will be used more optimally.
3. **Minimizes Risk and Enables Market Forces to React.** Operating in a free market means facing price fluctuations and risk. Accurate and up-to-date cost and revenue of production data helps minimize the risk involved in seasonal price fluctuations.
4. **Improves Farmers' Choices for Cropping Patterns.** Farmers should be informed of expected prices and be able to estimate anticipated production costs. They should be able from the information provided to predict market changes and the impact of international events on the domestic market so that they can utilize their resources profitably—by rationalizing their cost of production, and by choosing the best cropping pattern.
5. **Facilitates Public and Private Sector Investment Decision-Making.** The accuracy that results in data collection from the new procedures will contribute greatly to future investment decisions --both public and private sector -- and national income accounting. Policy makers and farmers will have much greater confidence that correct decisions can be made from these more accurate and timely statistics.
6. **Helps Match Irrigation Water Supply and Demand.** Unexpected water irrigation shortages lead to decreased productivity as well as water waste elsewhere in the country. MWRI's capacity to deliver water when needed is contingent on correct and real-time information from farmers.

## Progress in Information Systems

### Cost of Production and Farm Income Data

The MALR has over the past few years concentrated on improving the collection and distribution of marketing statistics. The purpose of this work has been to improve decision making of private

and public producers and traders, and improve the quality of analytical work that uses marketing data.

The Economic Affairs Sector (EAS/MALR) is now applying new procedures (based on World Bank methodology) for collecting cost of production and farm income data in order to establish farm budgets. These new procedures are being phased into an expanded number of governorates as well as to the new lands. EAS staff have been trained in proper sampling and selection techniques, procedures for collecting farm data, construction of farm budgets, and farm income analysis.

The prepared farm budgets now cover nineteen governorates in Upper and Lower Egypt at the village, district, and governorate levels. The methodology has become routine work for the EAS staff at headquarters and at statistical offices in the governorates. EAS has also established a database that includes the farm budget data available on CD diskettes and easy to update every agricultural season. This information is the foundation for the creation of a national accounting system for the agricultural sector according to UN/NAS guidelines.

To date, over fifty workshops have been held in nine governorates, solidifying widespread understanding and support of the new procedures. Twenty-eight of these workshops were directed at the most important stakeholders in information collection and dissemination -- farmers. Last year alone, 2255 farmers selected through random sampling attended farmer awareness workshops.

### **Information on Planting Intentions and Projected Water Demand**

The Ministry of Water Resources and Irrigation's capacity to deliver water when needed is contingent on correct and real-time information from farmers. Indicative cropping patterns are no longer enough to determine farmer water needs, as information is no longer precise with respect to where certain crops are planted, nor when planting occurs. As a result, from time to time excess water is delivered, or irrigation water is delivered in insufficient quantities and at the wrong time. Unexpected water irrigation shortages lead to decreased productivity as well as water waste elsewhere in the country.

In response to these challenges, in mid-1999 the MALR and the Ministry of Water Resources and Irrigation (MWRI) worked together to launch the Matching Irrigation Supply and Demand (MISD) activity. This was designed to improve information flow between the two Ministries to assist with delivery of irrigation water. The activity's overall objective is to obtain information from farmers on which crops they are growing and which ones they intend to grow, and deliver that information to the MALR, which will in turn provide the data to the MWRI.

The program has expanded rapidly across the country. Beginning from an initial pilot project of five districts covering 300,000 feddan, MISD now covers 69 districts, and real-time reliable information now exists for nearly 3 million feddan, half of all arable old land in Egypt. Creating a real-time information system on actual and anticipated crops grown in the field is enabling MWRI and MALR to estimate water requirements at every canal, and expansion of the MISD program will guarantee that irrigation supply meets demand across the country.

### **Yield forecasting**

In 1998, the Economic Affairs Sector (EAS) of MALR worked with APRP/MVE to develop state-of-the-art techniques for devising accurate forecasts in cotton and wheat production. The project began in four pilot governorates, and relied on cross-section data samples in order to produce reliable indications of yield. The project also included a technical assistance component to train Ministry staff in sample collection and data analysis techniques. The results have been impressive, and yield forecasting now covers all cotton- and wheat-growing areas.

## **Methods of Estimating Crop Area**

EAS/MALR have worked with APRP/MVE to develop accurate procedures for estimating crop areas of the major summer and winter crops -- cotton, rice, maize, wheat, and berseem. Beginning in 1998, EAS worked in cooperation with APRP to establish advanced procedures for estimating the area of these crops in six governorates. Based on the success of these sampling techniques, APRP trained governorate sampling staff in how to apply improved methods of measurement. The project has furthermore established a database for crop area data collected by the surveys.

The Ministry has been an active partner in this process, and has demonstrated its commitment to accurate data collection. This year, MALR purchased three sets of instruments from their own budget to distribute to the six governorates included in the project. The sampling staff are trained, and crop area estimation techniques have become an institutionalized function of MALR.

## **On-line Market Information for Cotton, Rice, and Horticulture**

### **CATGO**

Exporters, importers, and processors of Egyptian cotton now have direct Internet access to information on fiber properties for every single lot produced in Egypt. CATGO, the Cotton Arbitration and Testing General Organization, takes samples from every lot at ginning mills for testing using new HVI equipment, for such properties as staple length, strength, color and trash content.

CATGO's database of those HVI tests is now accessible at the website. Users of CATGO's on-line database can search for lots that fulfill specific criteria regarding variety and fiber characteristics. Spinners worldwide can now identify specific lots of bales of Egyptian cotton that match their needs most closely. CATGO and ALCOTEXA are now exploring future prospects of building e-trade capability into the website.

### **Cotton Marketing**

The Ministry of Foreign Trade has worked in collaboration with RDI to build a market information Internet website designed to provide easy access to up-to-date data on market conditions in cotton. Web pages provide the most recent information on production, stocks, exports, mill deliveries, remaining stocks, and prices for both Egyptian varieties and its principal competitor, American Pima. The Ministry of Foreign Trade is taking over responsibility for keeping the website up to date.

### **Rice Marketing**

The rice marketing website was also developed at the request of the Ministry of Foreign Trade. It provides exporters, traders, and decision-makers with the most up-to-date information about rice, including production, exports, and pricing of rice (domestic and international prices).

### **Horticulture**

The horticulture website is designed for producers, Egyptian exporters, and policy makers. It provides the most recent information on export and local prices, production, Egyptian markets, competitors, and tariffs. This site is sponsored by Egyptian Export Promotion Center (EEPC) within the Ministry of Foreign Trade.

## **Objectives that Contribute to the Overall Vision**

1. Technical and institutional capacity building continues and expands to build a farmer-friendly market information system.
2. MALR maintains a comprehensive and up-to-date database of farm budgets and farm income at the governorate level. This information is transmitted by electronic mail to private- and public-sector stakeholders.
3. Extension is crucial to information dissemination. Extension departments understand season price movements to help farmers make profitable cropping decisions.
4. The GOE adopts the United Nations' System of National Accounts Standards, and a national database is established which utilizes the extant governorate-level database of farm budgets and incomes.
5. The field survey data is collected appropriately, guaranteeing that it is in a format usable for the National Accounts System. The GOE meets IMF data dissemination standards.
6. Yield forecasting and area estimates are expanded to cover all basic crops and regions.
7. Matching Water Supply and Demand program expands to cover all lands.

## **Constraints to Achieving Objectives and Overall Vision**

1. The old methods of data collection, which were used over the last three decades for crop budgets and area estimation, were based on personal judgement and good guessing and considered to be suitable. Thus the new concept of establishing farm budgets using field data surveys requires greater effort to ensure that these practices are maintained and followed consistently.
2. The proposed procedures of sampling selection, data collection, constructing farm budgets, and forecasting yields require software programs. EAS/MALR and RDI/APRP developed these programs, but funding is required to establish an electronic network at the governorate level to facilitate the transmission of the collected data.
3. Instructions from EAS/MALR are required to make field data surveying a sustainable part of the responsibilities of agricultural statistical offices in each governorate.
4. The budgetary and technical support for MALR extension agents is not adequate, challenging their ability to collect and disseminate information.
5. The Ministry of Foreign Trade needs adequate budgetary resources as well as staff skilled in information technology to maintain the websites and guarantee that information is accurate and up-to-date.

# Agricultural Research and Technology Transfer

## Vision

*Agricultural research in Egypt produces a steady flow of new technologies – especially high value crop varieties – that are licensed to the private sector for production, marketing and distribution to farmers and others who use the technologies to increase continuously their incomes.*

## Why is this Vision Important?

1. **Continued Increases in Agricultural Production.** Egypt's arable land is limited but its population continues to grow. Continued increases in agricultural production will need to come from higher yields and the production of higher value crops on this limited land. For agricultural incomes to improve, agricultural productivity must improve, and this means that better technologies must be developed, marketed, and adopted.
2. **New Technologies tied to Market Demands.** Until recently, agricultural research in Egypt, like in most developing countries, was a purely government affair. The Ministry of Agriculture conducted the research, developed the technology (usually a new variety), produced the product, then distributed it to farmers, often at subsidized prices. Universities conducted research too, but had little connection with the farm community.

Conditions have changed, however, rendering this old model obsolete. In an open market economy, new technologies can no longer be developed in isolation from market demands and the availability of imported, competing technologies. To be effective, government research centers must engage in dialogue with farmers and companies to assess the demand for certain technologies, and cooperate with international partners to “license in” new technologies and integrate them into their R&D work. This is particularly true in biotechnology – the current cutting edge of agricultural research – where international companies own much of the best technologies. Research centers must be “connected” locally and internationally to serve farmers' needs for constantly improving productivity.

3. **Private Companies for Production and Marketing.** Governments have also come to recognize that the private sector is better adapted to carry out the production and marketing functions of technology transfer. New policies and institutions are needed to allow government researchers to license their technologies to private companies for production and marketing.
4. **Respect for IPRs.** Intellectual property rights (IPRs) have also come into prominence in recent years. Agricultural researchers have recognized that IPRs must be respected in order to access new technologies owned by foreign entities (such as the “gene gun.”). Local IPR laws are also being recognized as a means to protect local innovations, facilitate their licensing and the collection of royalties. New regulations and procedures are required to take advantage of new IPR laws.
5. **Biotechnology – A Source of Great Hope.** Biotechnology has become a source of great hope for the engineering of increasingly productive, pest-resistant, and nutritious crops. Many see biotechnology as the fundamental tool for a second Green Revolution. For Egypt to benefit from biotechnology, it needs good IPR laws but it also needs biosafety regulations. Only when biosafety systems are in place, can genetically enhanced crops be tested for food safety and environmental safety and approved for use by farmers.

## **Progress in Agricultural Research and Technology Transfer**

APRP, working in collaboration with the Agricultural Research Center (ARC) in the Ministry of Agriculture, has helped foster progress in several areas of agricultural research and technology transfer.

1. **Technology Management and Commercialization Policy of the ARC.** APRP provided essential support for the development and acceptance of the Technology Management and Commercialization Policy of the ARC. This policy allows the ARC to apply for intellectual property protection for its innovations and then license them to private companies for production and marketing. Revenues are to be shared with the innovators to provide an incentive for innovative research that results in useful products, including new plant varieties. The policy also allows the ARC to “license in” others’ technologies and the signing of Cooperative Research and Development Agreements (CRADAs) for joint research with private companies.
2. **Technology Management and Commercialization Office.** APRP provided essential support for the creation of the Technology Management and Commercialization Office, established by ministerial decree in 2001, which will implement the aforementioned policy and raise awareness of intellectual property and technology transfer issues at the ARC.
3. **Variety Release Policy.** APRP helped develop, draft, and obtain approval for a new Variety Release Policy that requires the Agricultural Research Center to license its new varieties to private seed companies for multiplication and marketing to farmers.
4. **Plant Variety Protection Draft Legislation.** APRP helped the Ministry of Agriculture develop plant variety protection draft legislation – both a law and an implementing decree – that meets international standards. The law is expected to be passed by the People’s Assembly this year. APRP helped CASC to create a Plant Variety Protection Office to implement the law as soon as it is passed. PVP will reward researchers and facilitate technology transfer through licensing.
5. **Biosafety Regulations.** APRP helped develop draft Biosafety Regulations, which are currently being considered by the National Biosafety Committee. These regulations will allow for commercialization of genetically-modified crops once they have passed rigorous food and environmental safety assessments.
6. **Competitive Grants Program in Agricultural Biotechnology.** APRP helped develop the framework for a potential endowment for a competitive grants program in research and technology transfer in agricultural biotechnology. The proposal is currently being studied by USAID.

## **Objectives that will Contribute to the Overall Vision**

1. An enhanced level of innovation at the ARC, with useful plant varieties and other agricultural technologies being released at an accelerated rate. Increased innovation is the expected fruit of the new Technology Management and Commercialization Policy. Researchers will be rewarded for success in developing products that farmers want to buy.
2. Universities and other research institutes develop and adopt similar Technology Management and Commercialization Policies that encourage and reward innovation in agriculture.

3. Development and strengthening of the Technology Management and Commercialization Office at the ARC to implement the new Policy and thereby protect, encourage, and license innovations. Through this Office, most new innovations are licensed to private companies for marketing and dissemination.
4. Development of new varieties and other technologies *that respond to the needs of the market*, i.e., farmers, traders, processors, and exporters. Research agendas will be defined based on dialogue with these commercial entities. This will result in more relevant research products and accelerate technology adoption.
5. Collaborative Research and Development Agreements (CRADAs) signed between ARC, universities, and private companies involved in seed and other technologies.
6. Implementation of IPR legislation that the People's Assembly recently passed. Implementation will make it easier for Egyptian agricultural research to access internationally developed and protected technologies. Such a law will make it possible for agricultural researchers in Egypt to protect their innovations and potentially profit from them, thereby creating an incentive for more innovation. Passage of the Plant Variety Protection chapter of the IPR law will allow Egyptian breeders for the first time to protect legally their new varieties.
7. Development and strengthening of the Plant Variety Protection Office to enhance its abilities to evaluate and process applications for PVP titles. The issuance of PVP titles will facilitate the collection of royalties through licensing and encourage plant breeding. Joining UPOV will signal to the world that Egypt is a good place to commercialize and produce new plant varieties.
8. Biosafety Guidelines officially adopted, thereby paving the way for the commercialization of transgenic plants that have demonstrated their safety for health and the environment.
9. Increased investment in agricultural research by the GOE and its donors. Such funding typically results in high returns (see recent IFPRI study of Egyptian rice research). Much of this funding can be allocated through a competitive grants formula to ensure it targets the best projects. This is the approach embodied in the proposal of the Egyptian Seed Association to manage and endowment from USAID to fund the best research and technology transfer projects in the field of biotechnology.
10. Extension services provide the link between research centers and farmers.

## **Constraints to Achieving Objectives and Overall Vision**

1. It will not be easy to change traditional ways of managing research in the ARC. Mentalities must evolve. Resistance can be expected from those who control and benefit from current systems of revenue collection, much of which is done through the Special Economic Unit in each research institute at the ARC.
2. Distrust between the public and private sector also poses a challenge. Many in the ARC resist the idea of giving farmers and traders a role in defining research agendas. Many resist the idea of using the private sector to market and distribute their innovations. They would prefer to commercialize themselves or through public companies or the public extension service. Many in the private sector are reluctant to invest in research or are wary of engaging in any joint activities with public entities that they perceive as bureaucratic and unresponsive.

3. Funding and management constraints can retard the development and effective operations of the Technology Management and Commercialization Office and the Plant Variety Protection office.
4. Anti “GMO” sentiments, based on attitudes in Europe, may spread in Egypt, delaying the introduction of transgenic crops.
5. Inadequate funding for agricultural research can threaten progress on all fronts.