

ARIES

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Assistance to
Resource Institutions
for Enterprise Support

Yemen Arab Republic Agribusiness Development Problems and Potential

Submitted to

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ARIES

Assistance to Resource Institutions for Enterprise Support

The ARIES project is designed to strengthen the capabilities of support organizations in developing countries to implement small-scale and micro-enterprise development programs. ARIES builds on the work of the Agency for International Development's former Program for Investment in the Small Capital Enterprise Sector (PISCES) and Small Business Capacity Development projects. It works with intermediary support organizations that provide services to small and micro-businesses and industries, such as private voluntary organizations (PVOs), banks, chambers of commerce, management training centers, business people's organizations, and other developing country government and non-governmental organizations (NGOs).

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The ARIES project has three major components -- research, training, and technical assistance -- designed to cross-fertilize each other. The applied research component focuses on economic, social, and organizational issues surrounding intermediary support organizations to inform AID missions and host country actions in this subsector. The training component includes design, testing, conduct and follow-up of training programs in such areas as finance, management and evaluation for PVO and NGO personnel. The technical assistance component provides short-term technical assistance to AID missions and intermediary organizations to assist small and micro-enterprise development.

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EXECUTIVE SUMMARY

As part of an effort to determine strategies and their implications for development of the Yemeni private sector, USAID commissioned this study of the problems and potential of business units in the agribusiness sector. The results of this study are to be used to identify USAID programming and project interventions that will facilitate the development of the private sector in agribusiness.

The Economy

The agricultural sector is the largest sector of the economy, accounting for about 24 percent of GDP in 1985, down from about 45 percent during the early 1970s. Approximately 86 percent of the population lives in the rural areas of the country, where agriculture is the main source of livelihood. The agricultural sector employs roughly 70 percent of the resident labor force. In comparison with the other nations in the Arabian peninsula, Yemen has been relatively well endowed naturally with approximately 3.5 million hectares of cultivable land.

The relative decline of the agricultural sector in the economy can be attributed both to more rapid growth in other sectors and to the increase in labor costs as a result of labor migration to the neighboring oil-exporting countries. In addition, the overvaluation of the Yemeni rial made food imports cheaper than locally produced food. As a result, agriculture attracted minimal capital investments, especially from the private sector.

The patterns of investment in the Yemeni economy between 1975/76 and 1985 show that the biggest investments were taking place in real estate. More than 46 percent of all private sector investment was in real estate; investments in manufacturing made up 12 percent of the total, and agricultural investments made up slightly more than 8 percent.

Investments in agriculture were concentrated in agricultural machinery and implements, and with the exception of broiler farms, investment in commercial farming was minimal. The pattern of investing in real estate has led to high land values, which has implications for agriculture as a land-intensive business. If a return on investment in land is calculated, the returns to agricultural production *per se* are minimal.

To protect the valuation of the rial, the government has imposed import restrictions by requiring import licenses on basic food commodities, pharmaceutical and medical items, raw materials for local industries, spare parts, fuel, oil industry development requirements, and capital goods for approved manufacturing and agricultural projects. Restrictions were placed on foreign exchange transactions by the Central Bank, and the exchange rate is regulated. A total import ban was placed on many consumer goods as well as fruits and vegetables. In the long run, the export of oil is expected to relieve partially the pressures from foreign exchange availability.

The Agribusiness Sector

The methodology used in this study was based on field interviews with selected entrepreneurs, case studies of specified businesses, interviews with support organizations, and reviews of recent studies of the agribusiness sector. The focus of the study is on industry subgroupings rather than on individual businesses, because the results of analyzing industry subgroupings are richer in programming implications. The industry subgroupings studied were agricultural inputs, farm production, marketing and distribution, fisheries, agro-industries, and services.

General Conclusions

- The vast majority of businesses in the country are family run.⁴ The modern corporation with professional management and widely dispersed shareholders has not made much impact on the Yemeni economy. Any program to support business development must recognize the implications of this situation for project initiatives.
- The overwhelming majority of businesses in the country are small, even where family assets are large. Instead of expanding the size of existing businesses, individual businessmen start new small and medium-sized enterprises. The implication is that any program aimed at private sector business development should concentrate on small businesses and start-up operations.
- Opportunities for private sector investments in agribusiness appear to be abundant. Profit margins are generally attractive. There appears to be no pressing need for any subsidies aimed at encouraging the development of the sector.
- Mutual distrust and resentment seems to exist between businesses in the private sector. This feeling has discouraged collaboration even where mutual benefits are to be had. Small businesses are particularly hostile to larger businesses.
- Yemeni businessmen are very independent, open, and spirited. They show a wealth of entrepreneurial initiative, so an entrepreneurship development program is probably unwarranted.
- Even though the financial system in Yemen is relatively undeveloped and Yemen is considered among the poorest countries per capita in the world, there is good evidence that lack of capital in the private sector is not a major constraint on agribusiness development.
- Foreign-made products have an image of higher quality which will be difficult for local producers to overcome even with price advantages. By implication, there are opportunities for local manufacturers to improve quality through higher standards for production specifications and improved inputs through such means as licensing.
- The agribusiness sector faces constraints in the availability of inputs, both from domestic sources and from imports.
- Agricultural producers have little knowledge of the appropriate use of agricultural chemicals.

- The distrust of individuals outside of the family, clan, or tribe extends also to foreigners, including donor nations. Any program initiatives from donor agencies or suppliers of technology and know-how will have to be packaged and presented carefully so they are not misinterpreted or disregarded.
- Information for making appropriate business decisions is not readily available to decision makers. This is especially true of foreign technology and foreign markets.

Market Development

- The distribution system for agricultural inputs is poorly developed even though it has recently shown impressive growth and improvement.
- Because of the limited availability of agricultural produce and processed foods, substandard products are able to command premium prices.
- The agricultural marketing and distribution system is very poorly developed: there is little price information for marketers, inadequate transportation, insufficient storage, and rudimentary packaging. There is almost no unit pricing in perishable commodities.
- There are virtually no quality grading standards for fresh produce. During periods of scarcity all produce is sold at premium prices. During harvest supply gluts, grading and sorting apparently are not worthwhile for producers. Quality grading and pricing can be expected as supplies increase relative to demand and as competition at the wholesale and retail levels increases.
- Marketing losses of fresh produce are high because of physical damage, withering, and bruising caused by inadequate transportation and packing materials.
- Food consumption habits, tastes, and preferences in the country are changing fast, and locally produced items are unable to satisfy such changes.
- Demand for and supply of fresh produce have increased substantially in the last few years. Demand is anticipated to consume available supplies in most products for the foreseeable future.
- The quality of most agricultural produce is below international standards, and yields are below international averages.

- The ban on imports of fruits and vegetables has allowed domestically raised produce to command premium prices in the market.

Policy and Regulatory Environment

Businesses do not operate in the policy environment, they operate in the regulatory environment. It does not matter to a businessman what the government has put in the Development Plan or what policy statements from high-ranking ministers appear in the newspapers. What really matters is getting foreign exchange or getting the import license. Policy statements are immaterial to the businessman if he cannot navigate through the complex regulations that result from the policy directive.

Important policy questions include the interrelated issues of the exchange rate and comparative advantage. By adjusting the exchange rate to a particular level, a case can be made for self-sufficiency in almost any product or commodity. Thus, the exchange rate can be used as an instrument of development policy as well as a means of allocating foreign exchange.

It is unclear whether the policy of totally banning the import of fruits and vegetables is consistent with the comparative advantage of agriculture in the Yemeni economy. For example, growing bananas is profitable because of the import ban, but bananas require large amounts of water. It is not clear whether economic rationality would encourage Yemen to become self-sufficient in banana production. Policies that need clarification include

- The appropriate roles for the private sector and public sector in economic development
- Exchange rate policy
- Food security, self-sufficiency, and import substitutions
- Export promotion policy

Promotion of a stable business environment depends on the proper management of the economy. Many of these issues get back to the questions of fiscal policy, monetary policy, tax policy, and exchange rate policy. Running a budget deficit, for example, undermines the integrity of many of the proposed reforms. Using the taxing and budgetary authority to underwrite the losses of state-run enterprises both displaces opportunities for the private sector and increases the tax burden on the private sector, which must underwrite the losses of the state-run corporation. Thus, the private sector loses twice.

A budgetary deficit risks increasing inflationary pressures if offsetting measures are not taken to decrease the growth of the money supply. Increased money supply encourages inflation, which in turn encourages investment in unproductive enterprises such as real estate and discourages investment in productive outlets such as agribusiness projects.

Inflationary pressures in the economy increase the demand for imports as imports become cheaper than locally produced goods. This generates more pressure on the availability of foreign exchange to finance imports. With foreign exchange reserves that are inadequate to satisfy increased demand, the government relies increasingly on other bureaucratic mechanisms such as import licensing requirements to sustain the exchange rate. These restrictions hurt the development of the economy and the agribusiness sector.

The regulatory environment has created a sense of uncertainty and insecurity within the private sector. Some of the contributing factors are

- Inconsistencies between the investment law and company law regarding the level of foreign equity participation permitted
- The cumbersome and time-consuming duty drawback system
- Tax assessments that are sometimes arbitrary and not applied uniformly from one business to another
- Price controls that are not enforced on imported goods as they are enforced on domestically produced goods

- Import restrictions and import licensing procedures that are often arbitrary
- Many commercial laws, including Investment Law No. 18, that allow government officials to change the application of the law by decree
- The lack of established grievance procedures for unfair enforcement of laws
- Double customs duties that are sometimes imposed on imported goods: regular duties are levied at the port and the same duties are levied again at internal checkpoints unless it can be proved that the goods have not been smuggled.
- Inconsistencies in the tariff structure: duties on raw materials sometimes are higher than duties on finished products; for example, finished poultry feed is subject to a lower tariff than the raw materials that go into the feed
- Arbitrary import restrictions, which have led to smuggling
- What appears to be a high and counterproductive internal transportation cost structure, imposed with government approval

The policy of encouraging the growth of the private sector is contradicted by government actions that encourage public sector enterprises. Public sector corporations are involved in horticultural nurseries, grape storage, food processing, and veterinary medicine. The Agricultural Credit Bank has entered the business of importing agricultural inputs, in direct competition with the private sector.

Import restrictions have allowed a few business enterprises that are influential to procure import licenses to achieve windfall profits. Profits accrue to those who have political influence and not necessarily to those who contribute value added.

Private sector investments are subject to extensive and often unnecessary review by the government. Investment projects under Investment Law No. 18 require approval from the Ministry of Economy, Supply and Trade; obtaining this approval is a cumbersome and time-consuming process with no apparent value for the private sector business. For agribusiness projects, it is unclear

whether the authority for approval lies with the Ministry of Economy or the Ministry of Agriculture.

Approval of an investment project requires presenting a feasibility analysis. Government officials are usually not qualified to verify the feasibility of a project, and there are no known instances of government officials providing helpful advice on project feasibility. There were reports of leaks to competitors of proprietary information contained in applications for project approval. Additional reports alleged that *baksheesh* was necessary to receive timely approvals. For private sector investors who have no contacts, securing project approval is excessively time-consuming and costly.

The Central Bank recently imposed regulations regarding private sector use of foreign export credit or supplier credit to import fixed capital goods or raw materials. An investor wishing to use foreign credit must notify, and channel the loan through, the Central Bank by opening a letter of credit through a commercial bank against such a loan. The enterprise must place a deposit of 35 percent of the value of the letter of credit in local currency with the commercial bank, and the bank in turn must transfer those funds to the Central Bank. The enterprise has to pay the next 35 percent of the value in local currency upon receipt of shipping documents. The balance is to be settled over a period of six months in equal installments.

The borrower is in effect the Central Bank, which settles the loan after the specified loan period. The businessman, who was required to repay the loan completely within six months, is also required to provide a pledge to the Central Bank, through the commercial bank that opened the letter of credit, that he will bear all foreign exchange risks and losses accrued by the Central Bank upon the maturity of the loan. This discourages private businesses from accepting loans in foreign currency from foreign lenders.

The overall outcome of these regulatory and policy obstacles are that

- The environment systematically discriminates against and penalizes the small to medium businesses.

- Businessmen perceive that government policies and regulations are constantly changing and biased against the private sector, thus discouraging long-term investments and favoring a short-term trading mentality.
- Communications and information flow between the public sector and the private sector is poor.

Management Dimensions

Management systems in businesses are generally family run. Non-family members in the business have limited career advancement opportunities. There is little delegation of authority in most businesses and in the public sector. Top managers were seen to be personally approving the smallest expenditures and not taking the necessary time to plan. Most organizations thus lack middle management skills, both because of the scarcity of trained manpower and because of the reluctance to develop management by delegating authority. Businesses depend heavily on foreign skilled manpower.

Because of the reluctance to delegate authority to non-family members, the size of the business operations of the largest families is self-limiting. This restriction can allow small businesses to take advantage of market opportunities which would otherwise be dominated by the few largest family businesses.

Foreign firms that wish to enter the Yemeni market must collaborate with a prominent Yemeni family if they hope to negotiate the complex bureaucratic environment. Rivalries between key personalities have limited the ability of prominent Yemeni families to collaborate in business ventures. Foreign investors must therefore choose just one family to collaborate with and forsake working closely with the other families. This makes the foreign firm dependent on the Yemeni family and their goodwill and ability to perform. Because Yemeni family businesses are run hierarchically, an arbitrary decision by a key family member could put the investment of the foreign firm at risk. Foreign firms want to avoid making any major investments that may be placed at risk.

Yemeni businesses have very little experience with foreign joint ventures. Businessmen profess to be seeking joint ventures with foreign companies, yet have unrealistic expectations about the relationships between the joint venture partners, further complicated by their lack of understanding of such issues as licensing, franchises, management contracts, trademarks, and the associated legal obligations.

Businessmen generally are unaware of opportunities available to them in foreign markets in areas of technology and know-how. Foreign equipment vendors have sold a lot of inappropriate equipment by offering to do "feasibility studies" which take advantage of the lack of knowledge on the part of the Yemeni businessmen.

The investment attitude is skewed toward short-term payoffs because of the prevailing uncertainties and the high rates of return that are generally realized under the present economic conditions and regulatory environment. Agribusiness investments are generally perceived to be long-term investments with long payoff periods perhaps because agribusiness is perceived to be limited to the farm production subsector and not to include the other subsectors such as processing and marketing and distribution.

Most businesses visited showed a need for improvement in management training, marketing, cash management, inventory control, accounting, and so on. Businessmen are eager to collaborate with donor agencies such as USAID in private sector development programs, but expressed strong preference for dealing directly with the donor organization rather than through the Yemeni government. Most are unaware of any private sector programs like those of USAID. A visible display of solidarity would boost businessmen's morale in what they perceive as their battle against government encroachment.

Support Institutions

The support institutions for private sector businesses are rather limited in their scope and are relatively undeveloped. They are heavily influenced by the government. Trade associations are weak. The only institutions representing

the private sector are the chambers of commerce and industry. The federation of the Yemeni Chambers of Commerce and Industry is weakened by bickering between the various chambers on the issue of leadership. Small businesses are not benefitting substantially from these institutions.

The agribusiness sector is liberally sprinkled with state-run and parastatal organizations, but they often compete directly with private sector efforts. Private entrepreneurs and government officials do not have a clear idea of appropriate roles for the private sector and public sector.

There is no credit reference bureau in the country. Financial institutions are not trusted by many businesses, some of which do not even maintain checking accounts. Banks are reported to be reluctant to give working capital loans. Most loans are reported to be short-term loans which are periodically rolled over to finance long-term needs. This practice leaves businesses very exposed.

Banks generally do not have the in-house expertise to appraise agribusiness loan prospects. To protect themselves, bankers require personal guarantees, mortgages, and other collateral far in excess of normal prudent requirements. Banks have been reported to grant far less credit on a project than was required, thus putting the project in danger because of undercapitalization. Suppliers of goods in the market often extend credit terms to their customers. In effect, the supplier becomes the banker for the small businessman by supplying him with working capital.

There is no bonded warehouse in the country to facilitate the timely entry of imported goods such as agricultural inputs, raw materials, and spare parts. Warehouse receipts are not used as collateral for financing small businesses in Yemen.

Natural and Social Limitations

Water for irrigation is a serious limitation on agribusiness development. Most farm production depends on rainfall, but only a small region of the country gets rainfall in excess of evaporation rates. The increasing number of boreholes is depleting the subterranean water aquifer, and drilling deeper boreholes only increases the cost of irrigation water. Despite the higher rainfall rates in the mountain regions, most of the rainwater is lost from runoff. Wind and water are eroding soil, destroying many arable lands. Poor agricultural practices and inappropriate use of windbreaks have further complicated the erosion problems. Groundwater salinity is increasing. Tropical and semi-arid regions like Wadi Al Jawf, Marib, and many parts of the Tihama have problems of high soil salinity. Because water is limited, leaching soil salinity is very difficult.

The land holding system has become a serious constraint on agricultural development. The farm holdings are highly fragmented and average about 2 hectares per farm holding, which limits commercial farming potential: land for commercial farming becomes prohibitively expensive, because investors have to accumulate many small lots and because of land speculation.

Human resource availability is a problem for agribusiness sector development in Yemen. Rural farm labor migrates out of the agricultural rural regions to urban areas, as a result of the demand for labor created by sectors of the economy concentrated in the key urban areas, and to the neighboring oil-producing countries, where the oil boom economies have created high demand for labor. The outcome has been a decrease in the availability of farm labor, which increases the labor costs and the farming work burden on women in rural regions. Remittance income from migrant labor allows farm families a higher living standard and strengthens the disincentive to farm.

Recommendations

The government needs to change its strategy for developing the economy from one of direct action and interventions to one of supporting and facilitating the efforts of the private sector. This is a change in the concept of the role the government should play in the economy. Adoption of a noninterventionist strategy involves acknowledging that some functions are best performed by the private sector and that government should limit its involvement to areas in which it has a unique capability. This change would have a number of important implications for existing and future programs:

- Government participation in commercial activities that compete with, or displace, the private sector needs to be reduced or eliminated. Government has inserted itself into commercial activities such as banking, marketing of agricultural products, agricultural production, and other areas of agribusiness. This leads to a tendency to overregulate and limit the growth of any private sector firms active in the same line of business. Although there may once have been a legitimate need for direct government involvement in commercial activities, it is highly doubtful that justification still exists, and the unanticipated side-costs are outweighing any benefits.
- The regulatory environment needs to be liberalized to facilitate private sector initiatives and minimize the required approval processes. While maintaining a positive policy environment, the government has taken an active regulatory stance with measures such as price controls, interest rate controls, exchange rate controls, licensing requirements, and business permits. The net effect of these regulatory controls has been to distort market forces and discourage private sector investment in spite of an outwardly positive policy environment. It is necessary to deregulate and liberalize the regulatory environment to be more consistent with the stated policy objective of encouraging private sector growth.
- Renewed emphasis must be placed on governmental provision of required infrastructure such as transportation networks, electricity, water, and communications. The government is uniquely qualified to develop infrastructure. The private sector is not equipped to do so, and private sector growth is not possible without them.
- Monetary, fiscal, legal, and trade policies supportive of a stable investment environment must be enacted. The government alone has control over these policies, but the impact is felt by the private sector. Lack of budgetary

control leads to government borrowing and leaves little capital for private sector investment. The government cannot legislate a sound currency, but must take appropriate actions to ensure faith in the currency and assure convertability. The government must provide a stable economic environment because uncertainty is deadly to long-term private sector investment.

Applied Research

Research needs to be done to define more carefully the specific problems faced by the private sector, and to make recommendations regarding specific solutions. In the policy and regulatory environment, the questions themselves are often sensitive and the answers are complex, demanding a sensitive approach.

At present, Yemen has relatively little debt denominated in foreign currency, and a readjustment of the exchange rate would be relatively painless compared with a later time when substantial foreign debt might be accumulated. The terms of reference for a study should include suggested means of cushioning the blow of any devaluation of the rial because some businessmen have incurred foreign currency denominated debt and would be ruined by any devaluation, even though the investment project might still be economically viable under a revised exchange rate structure.

The international comparative advantage of the various Yemeni agribusiness subsectors needs to be evaluated. This evaluation has to be done in conjunction with the exchange rate policy study because the domestic costs of production are directly linked to the exchange rate used. For example, the policy of encouraging domestic development of fruit production by banning the import of fresh fruit has had the effect of increasing local production of all types of fruit, even though some types of fruit should probably not be grown in Yemen. Bananas, for example, are a tropical rainforest fruit, yet banana production is thriving behind the import barrier. A study needs to be done soon because large investments are being made in crops that may not be economically appropriate.

A series of short, applied studies should be done on the economic and financial impacts of various regulatory practices including import licenses, price controls, the Central Bank's regulation of foreign credit for the private sector, project approvals and licensing, and government-controlled tender systems for imports, particularly on processing plants, raw materials, and poultry feed.

A nationwide consumption study needs to be done to identify the levels of consumption, changing habits, tastes, and preferences, and their economic impacts on the agribusiness sector development. This would become a benchmark study and would be used as raw material for market development studies done by private businesses. The results of this study should be readily available in a format that can be used by market researchers.

Business consultants should do a series of market research studies that would provide profiles and prefeasibility analyses of market development opportunities and appropriate technologies. Some technical assistance might be considered in helping an entrepreneur set up the prototype business venture in a new area. The price for this assistance would be open access to other businessmen. Yemenis are good emulators and would soon follow successful examples.

The legal codes and legislation associated with commerce and industry should be studied to evaluate the compatibility of the various existing laws and contradictions such as the one existing between Investment Law No. 18 and Company Law No. 106.

Information Dissemination

The results of any research reports should be published through the appropriate channels, and at least a summary of the study should be translated into Arabic. The chambers of commerce and industry are particularly appropriate recipients of the research results because their membership has a vested interest in seeing that business is regulated rationally and that public policy decisions are made on an informed basis.

A workshop or seminar should be sponsored through the chambers of commerce and industry in the country on practical issues and alternatives for privatization of parastatal organizations.

Technical Assistance

A program strategy should be adopted to strengthen institutions that provide essential support services to the private sector in agribusiness. In this context, the development of new institutions is not recommended. The chambers of commerce and industry, the financial institutions, agricultural research and extension organizations, and the central planning organization's statistical data bank are among those support institutions which should be given priority.

The chambers of commerce and industry could be strengthened by a staff development program of training and first-hand exposure to activities of the chambers of commerce and trade associations in other countries where such institutions have achieved record success in the interest of private sectors. A modest grant of funds could be made to the chambers to allow them to finance practical studies documenting the impacts of various policy and regulatory practices, using the results for educating their own members, and forming the basis for lobbying campaigns with the government.

The interests of small businesses are largely being overlooked in the chambers of commerce. It is normal but not healthy for officers and staff of these organizations to cater to the interests of their more influential members. USAID should consider financing a small business institute within the chambers to focus the attention of the business community and the government on the special needs and priorities of the small business sector. This should include an information center for market opportunities, information on technologies, and a clearinghouse for contacts.

USAID should consider the possibilities of providing intensive training to members of middle and upper management in public administration who have

positive views on the private sector, as a means of assisting the private sector in agribusiness sector development. The often arbitrary nature of public policy decision making and management creates endless problems and investment uncertainties for the private sector. Other areas of public administration training should be in statistical and other data gathering, policy analysis, and planning and budgeting. Technical training programs like those given at the Ibb Agricultural Secondary Schools and other technical schools should be encouraged.

USAID should consider assistance for various government agencies in appropriate planning and development of programs in the following areas:

- Standards and measures issues at the recently established Department for Standards and Measures of the Ministry of Economy, Supply, and Trade
- Processing project approvals and licensing in the Industrial Department of the Ministry of Economy, Supply, and Trade
- Extension service programs in the Ministry of Agriculture and Fisheries

I. INTRODUCTION

The Yemeni private sector has been in a transitional period since early 1970, from a centuries-old, traditional state of traders, merchants, and subsistence farmers to an environment of modern business enterprises. The modern business environment is characterized by international trade, long-term investments, complex financial transactions, international legal considerations, bilateral and multilateral treaties, technology transfers, and related characteristics of a modern emerging economy. Because of the lack of understanding of and experience with complex business operations in the Yemeni private sector, this economic and commercial transformation is exacting a price in terms of uncertainties and lost opportunities.

During this transitional period, economic growth and development have brought about a significant surge in business activity in every sector of the Yemeni economy, sustaining growth in the wealth and prosperity of the private sector. The Yemen Arab Republic National Constitution and the National Charter of the People's Congress have established that the national economy shall follow a free market system.

As part of an effort to determine strategies and their implications for development of the private sector, USAID commissioned this study of the problems and potential of business units in the agribusiness sector. The results of this study are to be used to identify USAID programming and project interventions that will facilitate the development of the private sector in agribusiness.

Methodology

The methodology used in this study was based on field interviews with selected entrepreneurs, case studies of specified businesses, interviews with support organizations, and reviews of recent studies of the agribusiness sector. The focus of the study is on industry subgroupings rather than on individual businesses, because the results of analyzing industry subgroupings are expected to be richer in programming implications for USAID.

A series of assumptions and working hypotheses that have implications for USAID programming were used in the study:

- Size of Business. The vast majority of businesses in the Yemeni economy are small or medium sized; therefore, the study concentrates on the smaller business units. Small businesses have little in common with each other based on size alone, and a subindustry sampling was undertaken as the best means to contact small businesses.
- Business Linkages. Business linkages are an important means of reaching and working with businesses. It is assumed to be more constructive to strengthen the existing linkages with suppliers of raw materials, finance, parts, and supplies than to try to set up new channels of distribution. On the sales side, it is easier to identify how a businessman goes to market and to strengthen the ties that already exist than it is to attempt to create new distribution channels and retail outlets.
- Intermediaries. Businesses are very difficult for government programs to reach individually because there are so many of them and the cost per contact is very high. The preferred strategy was to access businesses through intermediaries of some type. Intermediaries can be those individuals or businesses that already have established business ties with businesses such as trade associations, suppliers, financiers, wholesalers, and others. Special emphasis was given to identifying intermediaries with established links to small entrepreneurs.
- New versus Existing Businesses. Strengthening existing organizations is more cost-effective than starting new institutions or organizations. The costs of starting a new organization are high and the results are uncertain. There is generally a long lead time before a new business is viable. A minimum of five years is often required for an organization to become effective.

- Mainstreaming. It is more effective to mainstream small entrepreneurs into regular business support organizations than to start new organizations to handle the needs of small businesses.
- Public versus Private. Certain functions such as infrastructure development can be done only by the government. In other areas, such as adjusting to changing market conditions, cutting costs, or executing innovations, private sector businesses are more efficient and able to adapt more readily.
- Subsidies. Subsidies should be used very carefully so as not to influence the entrepreneur's decision by changing relative prices. Wherever possible, administered pricing and direct subsidies should be avoided. Such subsidies distort the price signals in the economy and influence business behavior, creating dependence on the use of subsidies for continuing in business.
- Regulatory Environment. Macroeconomic policies often have unintended side effects on the agribusiness sector and on small businesses in particular. When policies are translated into regulations, the impact is often at cross purposes with the government's stated intention.
- Marketing. Undeveloped markets, marketing channels, and distribution networks are a particularly important problem for agribusiness development. Examples abound of excess production of a particular commodity or product resulting in unsold inventories. The programming emphasis should be on market identification, which will stimulate production.
- Information. A large barrier to the development of agribusiness in Yemen is the lack of knowledge about market opportunities and appropriate technologies.

Background of the Yemen Arab Republic and Economic Brief

From a closed and isolated nation prior to 1962, Yemen has suddenly become open to the introduction of modern consumer goods and services and new technologies. In spite of the sudden opening of the economy and turbulent international economic conditions, the economy has managed to achieve favorable growth rates.

In 1973, the government began systematic economic planning to mobilize resources for economic growth. Through a series of economic plans, Yemen

has built a reasonable economic base to support the development of the various sectors of the national economy.

The agricultural sector is the largest sector of the economy, accounting for about 24 percent of GDP in 1985, down from about 45 percent during the early 1970s. Approximately 86 percent of the population lives in the rural areas of the country, where agriculture is the main source of livelihood. The agricultural sector employs roughly 70 percent of the resident labor force. In comparison with the other nations in the Arabian Peninsula, Yemen has been relatively well endowed naturally with approximately 3.5 million hectares of cultivable land.

Exogenous factors have played a large role in the recent development of the economy:

- As a result of the large increase in demand for labor in the neighboring oil-exporting nations in the 1970s, workers' remittances accounted for almost half of GNP from 1975 through 1981.
- As a result of being one of the least developed countries of the world, the country benefitted from substantial aid, grants, and concessional loans from various donor nations.

The relative decline of the agricultural sector in the economy can be attributed both to more rapid growth in other sectors and to the increase in labor costs as a result of labor migration to the neighboring oil-exporting countries. In addition, the overvaluation of the Yemeni rial made food imports cheaper than locally produced food. As a result, agriculture attracted minimal capital investments especially from the private sector.

The patterns of investment in the Yemeni economy between 1975/76 and 1985 show that the biggest investments were taking place in real estate. More than 46 percent of all private sector investment was in real estate; investments in manufacturing made up 12 percent of the total, and agricultural investments made up slightly more than 8 percent.

Investments in agriculture were concentrated in agricultural machinery and implements, and with the exception of broiler farms, investment in commercial farming was minimal. The pattern of investing in real estate has led to high land values, which has implications for agriculture as a land-intensive business. If a return on investment in land is calculated, the returns to agricultural production *per se* are minimal.

The balance-of-payments position has been in almost continuous deficit, which has resulted in a decline in the country's net foreign reserves. The largest export is worker's services to the Gulf area. Currently the remittances are down because of the downturn of the Gulf economies. Yemen exports very few merchandise products. As a result of the balance-of-payments deficit, the Yemeni rial has been devaluing at a rate of Y Rlş 4.56 to US\$ 1 in the last quarter of 1983, reaching a market rate of well over Y Rls 15 during the last quarter of 1986 and currently stabilizing at about Y Rls 9.72.

To try to protect the valuation of the rial the government imposed import restrictions by requiring import licenses on basic food commodities, pharmaceutical and medical items, raw materials for local industries, spare parts, fuel, oil industry development requirements, and capital goods for approved manufacturing and agricultural projects. Restrictions were placed on foreign exchange transactions by the Central Bank, and the exchange rate is regulated. A total import ban was placed on most consumer goods as well as fruits and vegetables. In the long run, the recently begun export of oil is expected to relieve partially the pressures from foreign exchange availability.

II. PROFILES OF AGRIBUSINESS SUBSECTORS

To assess the various industries in the agribusiness sector, we use subsector profiles. The agribusiness sector has been divided into six basic, integrated subsectors, using a systems approach.

There is potential for investment opportunities for the private sector in agribusiness; however, a number of problems inhibit the full development of this potential. They include

- Government policies and regulatory issues
- Uncertainties and attitudes of the private sector toward long-term investments
- Lack of knowledge and understanding of the agribusiness sector

Agricultural Input Subsector

This subsector is made up of businesses specializing in the supply and distribution of basic agricultural inputs, whether imported or locally manufactured. The key agricultural inputs addressed here cover the following:

- Seeds
- Fertilizers
- Chemicals
- Machinery and equipment
- Irrigation systems

This subsector is critical to the development of the agribusiness sector as a whole, particularly in making the transition from traditional subsistence farming to modern commercial farming.

The agricultural inputs subsector is relatively underdeveloped in the supply of inputs, in distribution, and in after-sale service. The lack of development can be attributed to the following factors:

- Traditional farming practices that do not require a sophisticated input delivery system prevail in most of the country.
- There is a lack of information on the benefits of agricultural inputs.
- The cost of developing a market for agricultural inputs is high relative to the returns available on alternative investments in the economy.
- Foreign exchange restrictions and import controls have limited the availability of imported inputs.
- Limited availability of inputs discourages the development of a service network to support after-sale services, because all the inputs that can be imported are sold. There is no need for services to foster further market development.
- The Ministry of Agriculture and Fisheries and the Cooperative Agricultural Credit Bank are involved in the import and distribution of various agricultural inputs, discouraging private sector involvement.
- Because research in agriculture is limited, it is difficult to identify appropriate agricultural inputs requirements.

The agricultural inputs subsector includes about 30 local business enterprises and some public corporations.

Seeds

Until very recently, all seeds came from local varieties saved by farmers at harvest. With the development of vegetables as cash crops, farmers have started to use imported seeds. Substantial quantities of foreign seed varieties are smuggled in from Saudi Arabia. Many of the foreign seeds have not been tested for germination, yield, disease and pest resistance, adaptability to local condition, and so forth. Some retail shops carry seed packages with expired validity dates.

The Ministry of Agriculture and Fisheries operates two programs for local production and supply of seeds:

- The potato seed production project under the Dutch Aid program, which is estimated to supply about 40 percent of seed potato demand
- The Agricultural Research Authority project for wheat seed production

Excluding these two projects, the estimated size of the seed market is Y Rls 5 million per year.

Fertilizers

The fertilizer market is relatively undeveloped. The development of this market has been limited because of

- The virtual monopoly of supply by the Cooperative Agricultural Credit Bank in certain areas
- An undefined strategy of supplying mostly urea, with a very limited supply of non-urea fertilizers

The government depends on donations for the supply of urea fertilizers; non-urea fertilizers have mostly been imported by the private sector in limited quantity when import licenses are made available. The total annual average

supply of fertilizers is estimated at 25,000 MT, and about 80 percent of it is urea.

The limitation on the growth of fertilizer demand is attributed to two basic factors:

- The lack of appropriate extension services to guide farmers in the use of fertilizers by type and quantity. It was reported that farmers have developed negative attitudes toward chemical fertilizers as a result of losses due to improper use of those fertilizers.
- The rudimentary level of soil research and soil testing to determine the recommended type and quantity of fertilizers.

Agricultural Chemicals

Yemen has very little infrastructural development to support the use of agricultural chemicals such as insecticides, herbicides, fungicides, pesticides, and veterinary supplies. The estimated yearly sales volume is Y Rls 7 million.

Public corporations have a near monopoly in this market. The Japanese trading firm Sumitomo Corporation is the main supplier to the Ministry of Agriculture and Fisheries, under a Japanese government grant. Chemicals other than the Sumitomo brands are supplied in limited quantities by the private sector. The import of agricultural chemicals is further complicated by the fact that the imports must first be approved by the Supreme Drugs Board, which supervises and approves the import of any pharmaceutical or chemicals.

The marketing complications and low market prices in Saudi Arabia have led to smuggling from that country. One businessman related that a particular fungicide was not available in the market at a critical time for the grape crop. The businessman bought round-trip air tickets for several of his employees to Saudi Arabia and they returned with packages of the fungicide as accompanying baggage. The prevalence of smuggled chemicals, the lack of applications knowledge, and the active role played by the government has discouraged the development of an active private sector.

Agricultural Machinery and Equipment

Between 1984 and 1986, imports of tractors declined from 770 units to 193 units, most probably because of import restrictions. Prior to 1984, tractor imports are estimated to have averaged 1,200 annually. No figures are available on the imports of tractor-drawn equipment. A "guesstimate" of annual imports would be 3,100 units. A serious problem is that a number of different kind of tractors are imported with inadequate allowances for spare parts. The service networks are relatively undeveloped in the rural areas, which leads to substantial down time for bringing tractors to service centers for maintenance and repairs.

The current estimate of tractors in agricultural use is 20,500 units. The various tractor-drawn implements in use is estimated at 25,000 units. The horsepower per acre is very low, and the demand for tractors and agricultural implements can be expected to grow substantially.

Irrigation Systems

All indications are that water is ultimately the limiting resource for agricultural development in Yemen and, therefore, efficient management and use of water is critical.

Yemen has two main rainfall seasons: the first extends from March through May, and the second from July to September. Most agricultural areas rely heavily on rainfall to irrigate their crops. The result is wide fluctuation in agricultural production. Out of a total area of about 1.35 million hectares of cultivated land, more than 75 percent is dependent on rainfall. As of 1982, only about 12 percent (118,904 hectares) of all cultivated land was irrigated.

Irrigation pumps are generally available in the market. Micro irrigation and other modern methods and systems have been introduced only recently. On farms where engine-powered irrigation pumps are used, flood irrigation is the most common method for all types of crops. Modern methods such as

drip irrigation, sprinkler irrigation, or pivot irrigation have only recently been appearing among the very few new commercial farming ventures.

Plastic pipe for irrigation is available locally, as are nozzles and hoses. There is no widespread appreciation of the possibilities of irrigation applications. Expertise in system design is lacking, and we found several examples of inappropriate and overly complex designs being sold to farmers.

Existing Market Suppliers of Agricultural Inputs

Figure 1 shows the key players in the supply of agricultural inputs in the Yemeni market. Among the enterprises involved, it has been observed that only the small enterprises showed any interest in developing support extension services in their business.

The agricultural inputs subsector is influenced by the government to a high degree. Because of this active government role, the private sector has not evolved to the extent desired.

Farm Production Subsector

Farm production is highly traditional, but has been influenced by several recent developments:

- Farmers are shifting production to cash crops such as fruits and vegetables whose market has been boosted recently by the total ban on imports of fruits and vegetables.
- Grain production is declining, and wheat imports are increasing. This is indicative of changing tastes in favor of wheat relative to traditional staple grains such as sorghum.
- The private sector has made large investments in broiler production.

Figure 1. Sample Enterprises Involved in Agricultural Inputs Business

ENTERPRISE	Type of Business			Size of Business			Level of Activities			Line of Agricultural Inputs Business				
	Private	Public	Co-operative	Large	Medium	Small	Imports	Wholesale	Retail	Seeds	Fertilizers	Chemicals	Machinery & Equipment	Irrigation System
Cooperative Agricultural Credit Bank		■		■			■	■	■	■	■	■	■	■
Military Economic Corp.		■		■			■	■	■	■	■	■	■	■
Al Watary Group	■			■			■	■	■				■	■
Ishaq & Sons	■			■			■	■	■				■	■
Al Aqil Group	■			■			■	■	■	■	■	■	■	■
Adhban Group	■			■			■	■	■		■			
Saeed Saleh Al Mohayah	■				■	■	■	■	■	■	■			
Arabia Felix for Agriculture	■				■			■	■	■	■			
Technical Company for General Trade & Agriculture	■				■	■	■	■	■	■	■			
Al Boun Agricultural Cooperative			■		■	■	■	■	■	■	■			
A.O. Sudam & Sons	■			■		■	■	■	■	■	■			

Horticultural Production

The wide variation in the topography of the country and the different climatic zones make possible a wide variety of types of horticultural production. Some natural limitations on horticultural product potential require identifying adjustments to technological and production practices that may overcome the limitations. Such limitations affect water and soil. Some of the businesses with investments in agricultural production are shown in Figure 2.

Sufficient rainfall is limited to a small area of the country. Where boreholes have been dug for irrigation, the rate of aquifer recharge is exceeded by the rate of water pumping for irrigation. This causes a continuous drop in water table levels. Increasing the depth of boreholes to pump for irrigation would lead to increased costs, which may not be economically justifiable. In addition, underground water salinity is present in production in certain regions of the country.

Generally, the level of essential macro and micro nutrients in the soil is poor; there is no organic matter in the soil. Increasing soil erosion is influenced greatly by wind and flood; no effective measures are being undertaken to control them.

Since the institution of a ban on all imports of fruits and vegetables in late 1983, horticultural production has become more profitable. Many small producers have shifted to horticulture, and commercial farmers have entered production. Although it is difficult to quantify, fairly large volumes of canned vegetables and fruits are smuggled into the country.

Fruits

Deciduous and tropical fruits have been produced in Yemen traditionally; however, production has been of poor quality and yield is low. Until the very recent entry of limited commercial fruit farming, production was carried out by

Figure 2. Enterprises with Investments in Farm Production Subsector

ENTERPRISE	Type of Business			Size of Enterprises			Cereal Production				Horticulture Production			Other Crops Production				Cattle		Sheep & Goats		Poultry Production						
	Public	Private	Co-operative	Large	Medium	Small	Sorghum	Wheat	Barley	Corn	Fruits	Vegetables	Nurseries	Seeds	Dry Legumes	Alfalfa	Tobacco	Cotton	Coffee	Breeding	Fattening	Breeding	Fattening	Broiler	Eggs	Hatchery	Breedstock	
Al Watania Poultry Farms Services Co		■				■																						
Hayel Saeed Anam Group		■		■					■	■	■	■				■						■	■					
Al Aqil Group		■		■						■		■																
Mareb Poultry	■				■																				■			
Amin Qassem Sultan		■		■						■																		
Min. of Agr. & Fisheries	■			■								■	■															
Military Economic Corp. (MECO)	■			■				■	■	■	■	■								■	■	■	■					
Bilqis Poultry		■		■																				■		■		
Jahran Poultry		■		■																				■		■		
Al Omeri Poultry		■		■																				■		■		
Al Sanabani Poultry		■		■																				■		■		
Al Lawia Cooperative			■			■					■																	
Abdul Qawi Al Homaiqani		■		■						■																		
Al Bashiri		■		■						■																		
Shara'ab Agr. Cooperative			■			■					■																	

small producers throughout the country. The estimated total area under fruit production is about 5 percent of the total land under cultivation.

Supply from local production is estimated at 200,000 MT per year. Most of the fruit produced is sold near the area of production. However, with the advent of higher prices because of the import ban, fruits are making their way to the larger urban markets. Prior to the import ban, the quantity of fruits imported ranged from 150,000 to 160,000 MT annually. Since the ban, prices have increased to three to four times the previous market price.

The prevailing market prices far exceed production costs, making production profitable even with the current low yield levels and poor quality of fruits. This high profitability is stimulating investments in fruit production by small and large investors. As of the date of this study, it is estimated that 1,500 hectares of land have been put to commercial farming of tropical fruits such as oranges and bananas and of deciduous fruits.

The high prices and attractive profitability have induced banana production, which uses large amounts of water, in this arid climate where water is the ultimate limitation on production. The wisdom of growing a crop that consumes large amounts of water in the desert when water is so scarce is debatable.

Applied research and development in tropical and deciduous fruits has been initiated in Yemen but on a very limited scale. Tests on suitable varieties have been undertaken at experimental stations such as Al Irra (for deciduous fruits) and Al Jarouba (for tropical fruits). Promising results have been obtained with some varieties of deciduous and tropical fruits. In particular, the following fruits show good potential for commercial farming:

- Deciduous: Certain varieties of apples, peaches, plums, and nectarines. Grapes, already an indigenous fruit, have high potential for development. Almonds and walnuts are viewed as fruits with commercial potential.
- Tropical: Citrus fruits (in limited areas), mangoes,

papayas, dates, and guavas have good commercial farming potential.

A serious problem for horticultural production is the lack of effective quarantine measures. Citrus canker was introduced through inadequate quarantine measures and is spreading within Yemen because of the lack of internal quarantine. The spread of citrus canker throughout most of the potential growing areas is inevitable, and investment in citrus is not advised.

No juice processing plants in the country rely on local production because all of the available local production is sold in the fresh market, leaving no supplies available for processing. No reliable figures are available on the demand for juice concentrates, but it has been estimated by industry sources at 70,000 to 80,000 MT.

Associated with commercial fruit production is the potential for complementary projects like honey production, where honeybees are essential for pollination. Another critical complementary investment opportunity is in nurseries, but the involvement of the Ministry of Agriculture and Fisheries in 24 nurseries for fruit seedling production creates uncertainty about the potential for commercial private nurseries.

To encourage the development of a horticultural industry, applied research is necessary to identify suitable varieties, identify appropriate agronomic practices, and institute disease and insect control programs and quarantines.

Vegetables

Vegetable production is relatively developed; many small farmers produce vegetables as cash crops. The import ban has created attractive markets for the farmers who produce vegetables.

The demand for vegetables, most of which are consumed fresh, is growing steadily because of changes in consumer tastes and preference, especially in the urban areas. The growth in demand for vegetables in Yemen is projected

to increase approximately 7 percent annually, taking into consideration population growth, increases in income, and changing consumer preferences, which lead to the introduction of new types of vegetables in the market. Also, the growth in the institutional market is influencing the increase in demand.

The different climatic zones in the country allow the possibility of year-round production of a wide variety of vegetables. Annual production is estimated at 550,000 MT. The quality of vegetables supplied to the market falls short of international standards. Although production costs are relatively high considering cultivation practices, low yield, diseases, and insect and pest problems, the high price prevailing in the market makes vegetable production attractive.

Commercial production has not yet started. Several cooperatives have entered vegetable production; the Lawia Cooperative has started producing and exporting 1,800 MT per year of okra, most to Saudi Arabia and some to the Gulf countries.

The prospects for agribusiness development in this sector depend on two developments: improving vegetable production through research on more effective agronomic techniques to stimulate higher levels of production and quality and to extend the harvest period to reduce the seasonal price fluctuations; and developing handling, storage, and packaging facilities.

Vegetable processing and canning plants have been established. Their input requirements are estimated at about 85,000 metric tons annually. The availability of local supplies of vegetables to these industries requires in-depth assessment.

Nurseries

The prospects for commercial nurseries are favorable because of the high demand for seedlings. Local private nurseries would provide several comparative advantages over imports:

- Timely supply of trees relative to imports.
- They represent a saving of foreign exchange.
- Over the long run, local nurseries can develop trees suitable for local conditions through the achievement of genetic control, varietal uniformity, higher yield, disease and pest resistance, drought resistance, and better quality.
- They can develop control and quarantine programs for trees to prevent the spread of disease and pests between the various regions of the country.

The demand for fruit trees is currently estimated at 1 million trees annually, with potential for further growth with further development of commercial fruit plantations. About 25 percent of the demand is satisfied through imports. In addition to fruit trees, demand potential exists for supplies of forestry trees, ornamentals, coffee trees, and wind breakers.

Currently, 24 government nurseries are in operation, producing about 800,000 seedlings per year. The subsidized prices of seedlings from these nurseries (selling at about 75 percent of production cost), form a substantial barrier to and disincentive for private sector investment in this industry.

Other Crops

Many other cash crops can be grown in Yemen. However, their economic and financial viability needs to be assessed.

Dry Legumes. Like most of the other crops, legumes are produced by small farmers under the traditional system. The production of legumes has shown a decline since 1983, in both quantities produced and area of land cultivated. The decline may have been caused by farmers switching to the production of more profitable vegetables. The potential for legumes development is unknown and would require in-depth study.

Alfalfa. The production of alfalfa has maintained a fairly stable area under cultivation, but yields have shown a substantial decline recently. Alfalfa production continues to be important for animal feed; it is fed fresh to animals. The development of alfalfa is important for livestock production development. Research is required to assess the local varieties of alfalfa and whether there is a need for new varieties with better yields and nutrient contents.

Industrial Crops. Tobacco and cotton are two industrial crops grown in the country. The tobacco variety is indigenous and is not seen as suitable for the tobacco processing industry. Cotton has been grown traditionally, but the acreage under cultivation has shown a substantial decline. No data or research information is available for an assessment of cotton production. A public cotton corporation buys most of the locally produced cotton and in turn sells it to the textile factory in Sana'a. The information obtained during the course of this study indicates that both the cotton corporation and the textile factory are losing money and are heavily subsidized by the government. In interviews, some cotton farmers said that the cotton corporation sets the purchase prices of cotton. The official price is Y Rls 9,643 per metric ton; farmers can get Y Rls 32,143 per metric ton from the black market. Farmers who attempt to sell in the black market face possible confiscation of their cotton.

Coffee. The land area under coffee production is estimated at 7,000 hectares, producing between 3 and 4 MT per hectare. Coffee production is traditional in Yemen and commands the famous name "Mocha" throughout the world. This name is derived from the port of Mocha, from which Yemeni coffee used to be exported to many parts of the world until the beginning of the 20th century. Coffee production in Yemen has declined from an estimated 20,000 MT annually at the turn of this century to about 3 MT. The decline in coffee production is attributed to Qat, a competitor not only for coffee but also for other crops, because of its high profitability. Yemeni coffee may have some potential, especially in terms of exports, by association with its famous "Mocha" name. It is essential that an in-depth study for coffee be undertaken to assess the potential and how it may be exploited. Currently,

the Ministry of Agriculture and Fisheries is giving high priority to developing local coffee production.

Livestock Production

Based on the following estimates for 1986 supply data, the supply of red meat in the Yemeni market comes from a combination of local production (supplying about 46 percent of total supply) and imports of live animals and frozen or chilled meat (constituting about 54 percent):

■ Local production of red meat	24,000 MT
■ Imports (including live animals, and frozen and chilled meat)	28,000 MT

The local supply of red meat comes mainly from individual farmers selling their culled cows, calves, sheep, and goats. There are no livestock breeding and fattening projects in any real sense of commercial development -- except two small experimental projects run by Hayel Saeed Anam Group and MECO (Military Economic Corporation). Even these two concentrate their operations more on fattening the animals than on breeding.

The estimated per capita supply of meat is 5.6 kg, while the demand per capita is estimated at 14 kg. The demand is projected to grow at approximately 8 percent annually at both the household and institutional levels, taking into consideration population growth, institutional developments, and income growth.

Agribusiness development in livestock production is hindered by the lack of good veterinary services in Yemen. In addition, the Ministry of Agriculture is importing veterinary drugs for sale at what are reported to be subsidized prices. This has created uncertainty in the private sector, and as a result, there are no private importers of veterinary drugs.

Dairy cattle production is not recommended. Many feasibility studies have indicated it would not be viable, particularly because of the existing processing plants for reconstituted milk.

Poultry Industry

Commercial broiler production in Yemen is conducted by a large number of small producers, whose output is about 65 percent of the total, and four large industry producers, who control the remaining 35 percent. Birds are sold by head, not by weight. The prevailing market retail price ranges from Y Rls 22 to 25 per live bird, irrespective of their weight. The demand for poultry meat is growing, because it is the cheapest source of meat in the market, particularly for lower income groups. Table eggs sell at retail prices of Y Rls 42 to 45 per tray of 36 small to medium-sized eggs. So far, no grades or standards have been established in the marketing and distribution of broilers or eggs.

At the present level of poultry broiler production and egg production, the industry consumes about 275,000 MT of poultry feed, which is all imported in 50-kg bags. Only one feed mill is known to be in operation, but it operates at less than 50 percent of the plant's capacity of 10 MT per hour.

Four commercial hatcheries are owned and operated by the big poultry companies in Yemen. The existing hatcheries supply about 50 percent of the day-old chicks demand of approximately 85 million chicks. The rest are imported; the Netherlands dominates the market. These hatcheries are not involved in the production of layers. All hatching eggs are imported from the Netherlands.

The poultry industry, although fairly well developed in broiler production, faces many problems:

- **Feed:** Dutch companies have dominated the supply of poultry feed, mainly through the four major companies in the poultry industry. Small and medium producers are dependent on the mercy of the four companies. This situation has been further

complicated by the recent institution of feed imports through a tender system controlled by the government, which has led to some feed shortage and untimely supply of feed in the market.

- Day-old chicks: The industry faces similar problems with feed, which has been complicated by the import control.
- Management: Although the small and medium producers have managed to survive, they still face management problems, the lack of skilled manpower, and limited credit to assist them with working capital or expansion of their operations.
- Veterinary service: Diseases such as Newcastle and infectious bronchitis have affected the efficiency of production, especially for small and medium-sized producers, resulting in poor feed conversion and mortality rates. These problems have been complicated by the shortage of veterinary services and medicines, and the absence of diagnostic laboratories.

At the current stage of the industry, several opportunities for private sector investments in downstream and upstream vertical integration of the industry exist:

- Expansion or new investments in broiler production. Production growth is estimated at 4 percent annually.
- Investments in table egg production, since current supply from local commercial production falls short of the market demand; however, a potential complication to private sector investment is the Mareb Poultry Company, a public corporation that is heavily subsidized by the government.
- Existing hatcheries supply only about 50 percent of the demand for broiler day-old chicks. There is room for new investments by the private sector for production of not only broiler day-old chicks but also table egg layers.
- With the development of local hatcheries, opportunities are opening for investments in the production of breeder stock and fertilized hatching eggs for both broilers and layers.

Marketing and Distribution Subsector

The agribusiness marketing and distribution subsector covers the linkage system of supplying the outputs from the producer to the consumers. This

subsector is associated with post-production (for processing plants) and post-harvest (for farm production) handling of products:

- Storage
- Grading and packaging
- Transportation
- Sales -- wholesale and retail

The marketing and distribution system, although showing an increasing flow of products, is characterized by large numbers of traditional small producers dealing with a large number of small buyers. Normally the middleman's role is to negotiate and set prices. The middlemen are given a commission or flat fee per unit for their services, and normally such intermediaries do not take title to the produce.

The channels of distribution for farm produce are schematically shown in Figure 3. The system is incapable of handling large volumes, whether at the assembly markets, the wholesale markets, or the central markets in urban areas, as a result of the lack of or improperly designed physical facilities. The truck carrying the produce becomes a moving warehouse. The proportion of produce flowing through each distribution channel varies for each commodity. Commodities normally move in small quantities, giving sellers little opportunity to consolidate. Post-harvest losses are high, ranging from 15 to 30 percent, depending on the perishability and durability of the produce.

The marketing and distribution system for the processing plants subsector has been relatively well developed, partially because of its previous development for imported processed goods and partially because of the systematic approach of processors in marketing and distribution. The typical channel of distribution for processed goods is shown in Figure 4. The system is characterized by five levels:

- The first level is the local processor or major importer of processed goods.

- The second level consists of regional branches of the processor or importer, or regional agents appointed by the processor or importer. The regional level is typically identified by a major urban area. The regional agents are, in many cases, not allowed to carry competitive products.
- The third level is the wholesaler, common in subregional and urban areas. Principals do not require exclusive agency relations nor do they forbid the wholesaler to carry competitors' products.
- The fourth level consists of retailers -- all kinds, types, and sizes of grocery stores.
- The fifth level includes individual, household, and institutional customers.

In a few cases, the processors sell directly to the retailers and institutional customers. Such exceptions mostly apply to processors of perishable products with short shelf lives, requiring special storage and transportation facilities.

Grading and Packaging

Grading standards are not used for farm products, so products sold in the market are not uniform in quality or standard measuring units. Fruits and vegetables are transported from the farm gate to the retail outlets in rudimentary packaging such as wooden crates, jute sacks, and corrugated cartons from other products or in bulk on trucks.

The packaging contributes to the heavy losses of produce resulting from physical damage and exposure to sun, dust, and pests. Before instituting grading standards and developing appropriate packaging material, however, it is essential to overcome some key prepackaging problems such as unsatisfactory farming practices, damage from poor harvesting methods, early or late harvesting, low quality cultivars and finally, the post-harvest treatment and

Figure 3. Distribution Channels for Fresh Agriculture Produce in the YAR Market

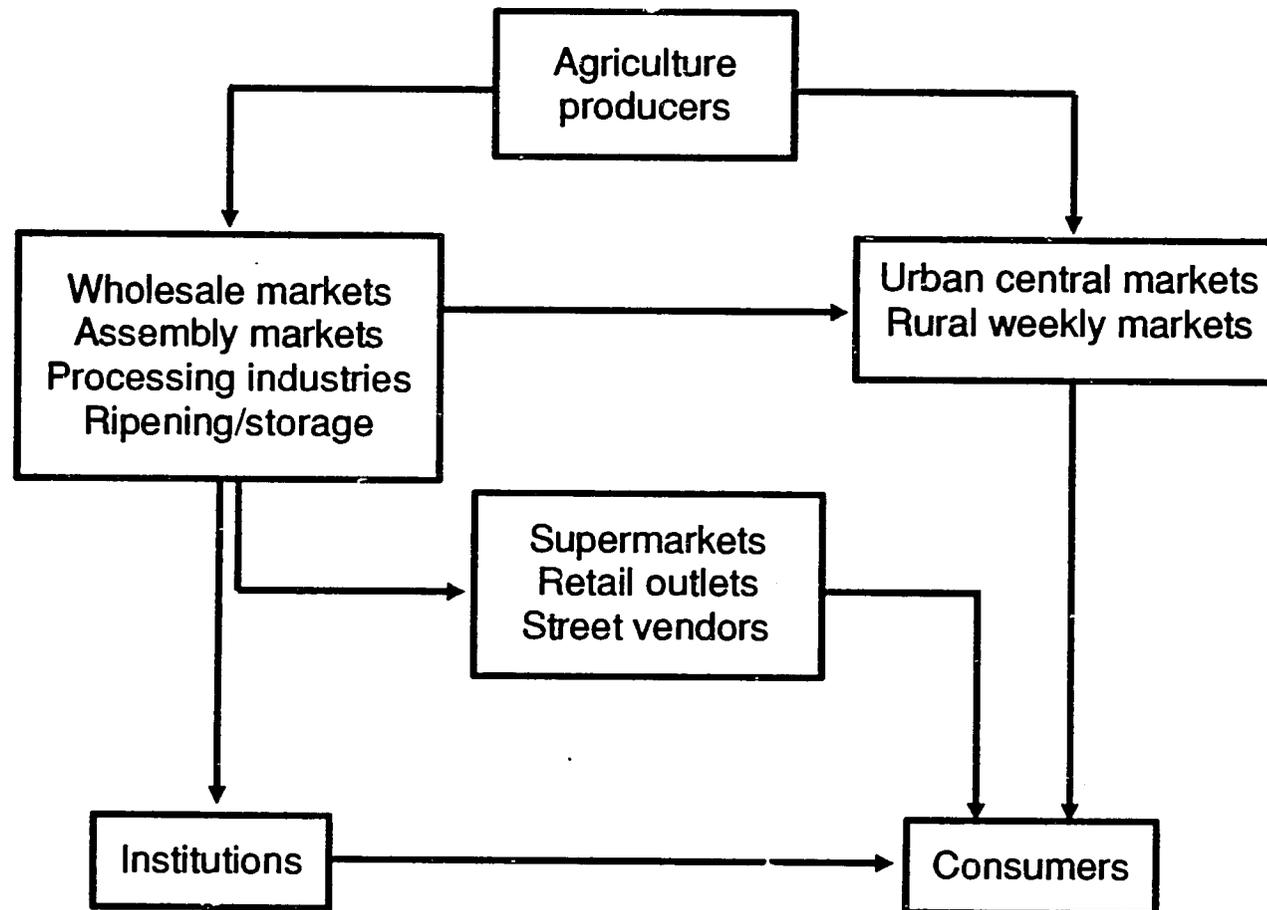
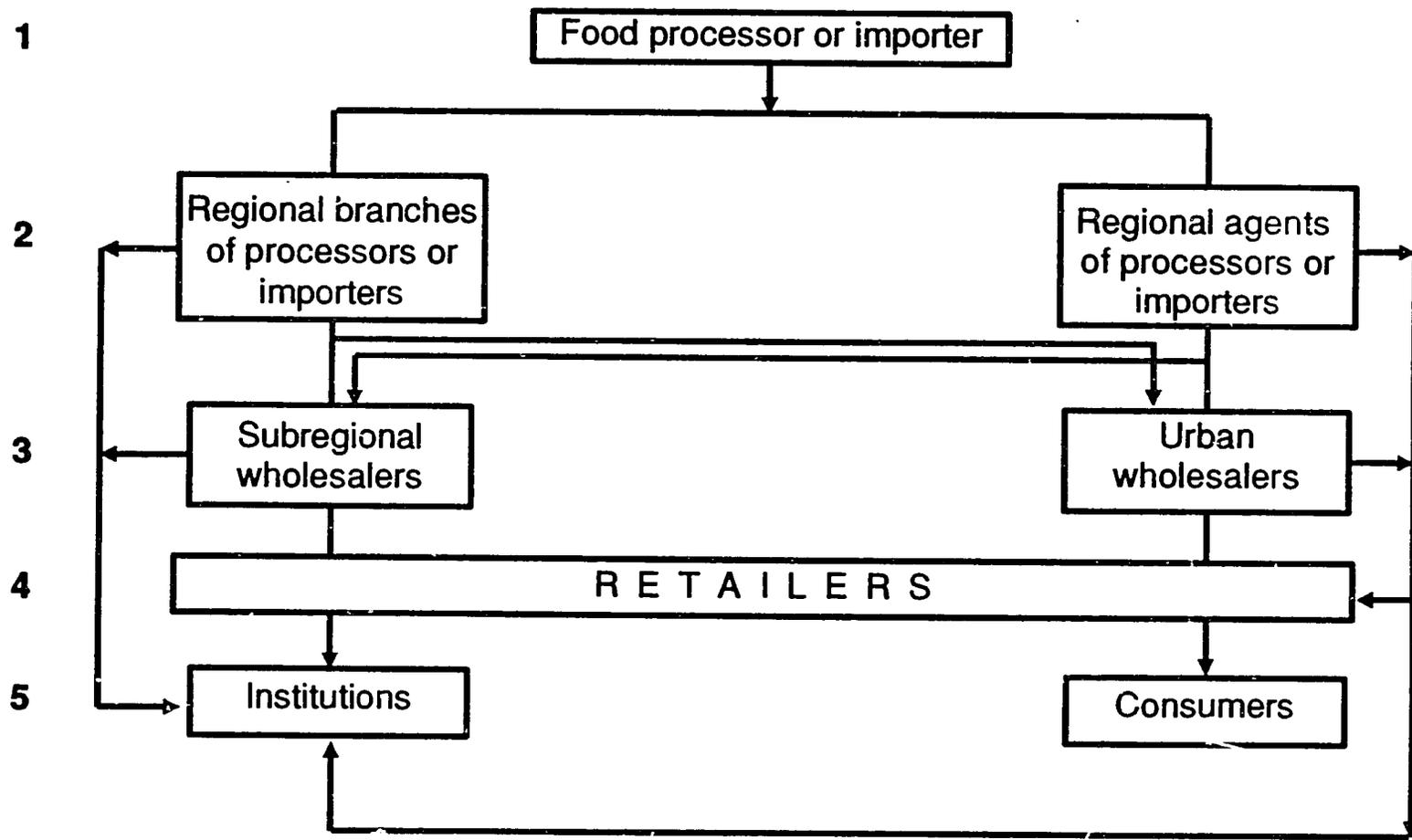


Figure 4. Channels of Processed Food Products Flow Through the Market Distribution System

Flow Level



handling of crops. The introduction of the prepackaging improvements will vary from crop to crop.

For processed goods, the processors have managed to institute their own grading standards and packaging system, which are satisfactory.

Storage

The absence of cold storage facilities has become a barrier to farm producers, because trucks cannot be received or unloaded at any of the market selling levels within the distribution channels. This problem is especially critical for volume producers who transport their produce in large trucks. Such producers end up selling their produce from the truck, making the truck a mobile storage system. In some cases, it takes 3 to 10 days to sell the truckload, thus becoming costly for the producer in terms of truck rental and loss of produce.

The biggest barrier to the development of cold storage facilities is the quality of crops. Under the present prestorage conditions, physical damage and bacteria and fungi infestation render crops technically unsuitable for cold storage. For the development of a cold storage system, it is essential to address the prestorage issues with farm producers, as well as to allow the evolution of the distribution channels so that the volume flow of produce will be large enough to justify the cost of storage and the transfer of title to wholesalers.

About 25,000 MT of capacity of cold storage warehouses have been built, mainly in the major cities, with almost 65 percent in Hodeidah. They were built mainly for imports of fruits and meat before the imports control. Large portions of these facilities are currently unused and cannot be used for local farm produce with the prevailing quality of crops and absence of appropriate packaging. Some of the cold storage facilities are being used to store and ripen locally produced bananas and citrus. The Ministry of Agriculture and Fisheries has recently established storage facilities for grapes and potatoes.

Transportation and Road Networks

Yemen has achieved substantial progress in developing road networks in the country. In the last two decades, about 2,300 kilometers of asphalt roads and about 1,500 kilometers of unsurfaced roads have been built. This road network has contributed substantially to the transportation and flow of farm produce in the country. However, there are still several problems associated with the road network:

- Many farm regions are not served with a proper road network, and poor road surfaces contribute to crop damages.
- Market access is limited for many producers in remote regions.

The main means of transportation used in the country are trucks, either owned or rented. On the average, produce that is transported travels a distance of 200 to 220 kilometers. Truck rentals in the country are controlled by the Transport Union, which sets prices. Transport costs are relatively high. Processors have achieved efficiency by using their own truck fleets. Although specialized transportation is not in use for farm produce and fish, refrigerated trucks are being used by processors of milk and ice cream.

To achieve scale economies in transportation, some basic issues must be addressed:

- Further development of surfaced road networks
- Consolidation of produce at producers level
- Change in the role of the Transport Union in pricing

Sales Outlets

Sales outlets around the country consist of 25,000 to 30,000 small wholesale and retail units. Of the total estimated number of sales outlets, only about 1,500 wholesale units are in operation, mainly in the urban areas,

handling only processed goods. Only two wholesale units are known to be handling farm produce, bananas, and citrus.

Retail outlets are typically small grocery stores with daily sales volumes estimated to range between Y Rls 250 and 500. Approximately 30 to 40 grocery stores, located in the three main cities, may be considered large-scale groceries. The small groceries are estimated to handle 30 to 60 kg of farm produce daily and the larger stores handle about 750 kg. The volumes handled, even by large groceries, are considered fairly small; this may be attributed to poor storage facilities, refrigeration units, and packaging and handling of particularly perishable commodities.

The development of the marketing and distribution subsector must take into account some of the following limitations:

- Investment Law No. 18 does not recognize marketing and distribution services as being part of investment projects, thus inhibiting the Law's incentive to private sector commercial investment in this subsector.
- With price control policies prevailing in the country, commercial investment in marketing and distribution would become easy targets for controls, although currently the market structure makes it difficult for price controls to be enforced.
- Market information flow is limited.

The areas of recommended investments are

- Grading, packaging, and storage operations
- Fleet transportation operations of various types
- Supermarket types of retail outlets
- Packaging materials

Existing Enterprises

Besides the small-scale operators, only a few large organizations in the market and distribution subsector are related to farm produce:

- The Ministry of Agriculture and Fisheries, which owns cold storage facilities for grapes and sells at wholesale to retailers
- The Military Economic Corporation (MECO), which owns and operates cold storage for potatoes, retail outlets for farm produce and meat, and transportation fleets of trucks
- The Al Gharassi Corporation, a private company with cold storage for meat and fruits, which operates mainly with imported produce at the wholesale level; currently handles storage and ripening of locally produced bananas

The Fisheries Subsector

The fisheries subsector is totally controlled by the government. A government-owned public corporation, the Fisheries Corporation, is under the supervision of the Ministry of Agriculture and Fisheries and the Central Planning Organization. The Fisheries Corporation has had problems in developing the fisheries sector which have been further complicated by its financial and management limitations. The 10 small fishing trawlers owned by the corporation are not operational, and the shrimp processing plant and ice plant have failed. Between 1982 and 1985, it was reported that the Fisheries Corporation spent about Y RIs 37.4 million in local currency and US\$ 10.7 million, with which it built modest fishing boat landing facilities and constructed retail fish markets in three main cities.

The supply of fish and shrimp to the market comes from an estimated 5,000 small fishermen. These fishermen continue to use traditional fishing practices with small traditional and locally made boats. Only recently have fishermen introduced some boat engines and the use of imported fishing nets. With these practices, deep sea fishing is limited. Two fishermen cooperatives have been imposed under the auspices of the Fisheries Corporation: one in Hodeidah with about 500 members and the other in Khowba with about 300

members. The majority of the fishermen have refused to join the cooperatives. The cooperatives are unable to achieve success because of their limited finances and management capabilities.

Based on the estimates of the Fisheries Corporation, the combined production of the individual fishermen reached 25,000 MT of fish and 800 MT of shrimp in 1987. This is a substantial increase from production estimates of 12,500 MT in 1975/76. Besides locally produced fresh fish, canned fish (mainly tuna, mackerel, and sardine) are imported. In 1983, the volume of imports was estimated at 4,000 MT, but it declined to 2,000 MT by 1985, because of import control. However, a fairly substantial volume of canned fish is smuggled into the country.

The marketing and distribution of fish flows through the following channels:

- The fishermen sell their fresh catch of the day through the auction located at the landing facilities owned by the Fisheries Corporation. The auction is conducted through a middleman, who sells the individual fisherman's catch to the highest bidder. From the sales revenue of the fishermen, 10 percent commission is deducted and distributed as follows:
 - ▶ 5 percent to the middleman
 - ▶ 3 percent to the Fisheries Corporation
 - ▶ 2 percent to the cooperative, whether or not the fisherman is a member
- The buyer packs the fish in ice covered by jute sacks. The fish are transported to central fish markets around the country.
- The buyer from the auction either sells the fish directly to the consumer at the central fish markets or to a dealer who then sells the fish at retail.

Traditionally, fish was consumed mostly in the coastal region of the country. Now, with the development of road networks and the availability of transportation and ice for preserving the fish, the market has extended to the interior. The ability to chill and transport fish has contributed to the growth

in demand. Changing consumption habits and consumer tastes and higher living standards are increasing the demand for seafood. From the present low per capita consumption of only 2.5 kilograms, the demand for fish is expected to continue to grow at more than 10 percent annually.

The development potential is expected to provide excellent opportunities for private sector investments. Fisheries industries that provide investment opportunities include

- Commercial fishing, especially from deep sea fishing of fish and shrimps
- Fish and shrimp processing for fresh, frozen, and canned products to supply local as well as export markets
- Distribution systems including storage, specialized transportation, and retail outlets
- Fish meal processing

The major obstacle to the development of this subsector is the government policy forbidding private sector entry and commercial investments. Several attempts by the private sector to enter this subsector have been stopped. The development of this subsector is dependent on a change in government policy toward private sector investments.

The Manufacturing Subsector

Although manufacturing industries are not generally classified in the agribusiness sector, the assessment here is undertaken for those manufacturing industries directly associated with the production of agricultural inputs and those indirectly associated as feeder industries important to the supply of essential goods and services such as packaging materials and cold storage systems. Examples of manufacturing industries categorized in the agribusiness category are

- Manufacture of agricultural machinery, equipment, and implements

- Manufacture of irrigation pipes, pumps, and accessories
- Production of nets for fishing, plant shades, and so on
- Packaging materials production
- Cold storage production

So far, no such manufacturing industries have been developed in the country. A few plants in operation are considered to be able to enter this subsector by diversifying their product line:

- The PVC pipes production plant of the Hayel Saeed-Anam Group, which concentrates on the supply of pipes for the construction industry, is capable of producing pipe specifications for irrigation purposes.
- The corrugated cardboard plant, also of the Hayel Saeed Anam Group, is now supplying packaging materials mainly to the processing plants in the country. With slight changes in size and specification of the packaging materials, this plant should be able to supply some of the demand in the agribusiness sector for packaging materials.

Some other manufacturing plants within this subsector are at the early stages of planning and feasibility studies. Alwatary Group is studying the potential for local manufacture of agricultural implements such as power-driven plows, tillers, and cultivators. Also, several private sector investors are seriously investigating the manufacture and assembly of irrigation pumps.

At present and into the near future, the supply of inputs from such manufacturing industries will have to be imported. The development of the industries within this subsector requires time because the technology and know-how will have to be transferred from overseas. Furthermore, the potential private sector investors will have to investigate the licensing and management issues associated with such industries, as well as the availability of skilled manpower.

Of prime importance to the development of this subsector are the policy issues that are becoming the limiting factors on private sector investments. The following issues must be addressed to lift the barriers to private sector investments:

- Investment law incentives
- Availability of accurate data and information
- Access to technology and know-how
- Bureaucratic procedures for investment approvals
- Imports and foreign exchange controls

The Hayel Saeed Anam group, currently the largest group in manufacturing and processing industries, entered the processing industries on a commercial scale in 1971. Their first investment was in a confectionery plant in Taiz that produced biscuits and hard candies. Soon afterward, investments in processing industries gained momentum. By the end of 1986, based on the 1985 Industrial Census by the Central Planning Organization and the study survey based on records from the Ministry of Economy, Supply, and Trade, a total of 453 small to large manufacturing, processing, and extraction plants had been established in the country, broken down into the following categories:

Number of employees	Food processing industries		Other industries		Total	
Ten or more	26	(23%)	86	(25%)	112	(25%)
Five to ten	<u>86</u>	<u>(77%)</u>	<u>255</u>	<u>(75%)</u>	<u>341</u>	<u>(75%)</u>
Total	112	(100%)	341	(100%)	453	(100%)

Of the total number of food processing industries in the country, 26 are large food processing plants and 86 are small to medium-size plants. The large plants are those employing ten or more workers, and the small to medium size plants are those employing five to nine workers. Table 1 gives some basic data on the food processing industries in Yemen. The 86 small to medium plants consist mostly of small bakeries producing 750 kg to 1,000 kg of bread daily; and one small oil extracting plant in Hoedeidah and a few ice-producing plants.

In economic values, the food processing plants in the country make the largest contributions among all the firms in the manufacturing and processing sector. The total cost of inputs for the 26 large food processing plants is Y Rls 745,339,000 for 1985, 49 percent of the total cost for the 112 plants in the manufacturing and processing sector. The total cost of output (Y Rls 1,218,041,000) for the food processing plants constitutes 47 percent of the total cost for the manufacturing and processing sector. At the same, the requirement of these plants for imported raw material inputs is estimated at Y Rls 713,383,000 or 58.6 percent of the total cost of the output.

The output figures for the various food processing plants in Yemen are given in Table 2. The output of all types of processed food products has shown substantial growth over the five-year period from 1981 to 1985. Fruit drinks (juices) and milk products in particular have shown significant growth. This growth has resulted from changes in consumer tastes and from preferences for processed foods, which increases the effective demand.

Although the food processing plants in Yemen depend on imports for 96 percent (in monetary values) of their raw material inputs, they are important for supplying processed food to the market, creating employment, and substituting for finished imported products while retaining the value-added within the local economy. More important, this is an already established market for any agricultural raw materials produced in Yemen.

Table 1. Basic Data on Food Processing Industries in 1985

	Large plants (10 or more employees)	Small-medium plants (5-9 employees)
Number of plants and distribution:		
Sana'a	8	27
Taiz	6	24
Hodeidah	12	21
Ibb	-	12
Baidha	-	2
Total	26	86
Total number of workers	4,248	684
Total costs of inputs (thousands of rials)	745,339	24,350
Total costs of outputs (thousands of rials)	1,218,041	49,529
Total costs of imported inputs (thousands of rials)	713,383	N/A
Net total fixed assets excluding land (thousands of rials)	684,503	17,263
Value-added based on cost of output (percent)	36	29
Average annual pay per worker (year)	29,512	27,083
Number of plants by type of incorporation:		
Public corporations	2	-
Mixed corporations	1	-
General partnership (joint liability)	3	-
Limited liability partnership	13	-
Individual or family	7	86

Note: "Public corporations refers" to those owned by the government; "mixed corporations" refers to firms jointly owned by government and private sector.

Source: Manufacturing and Processing Industry Survey results, Central Planning Organization, July 1986.

Table 2. Output of Food and Beverage Industries in the Yemen Arab Republic

Industry	1981	1982	1983	1984	1985
Bread (metric tons)	1,506	2,144	2,123	2,181	2,417
Biscuits and confectionaries (thousand of metric tons)	21.8	25.6	31.9	38.2	50.3
Ghee and edible oils (thousand of metric tons)	14.4	16.6	21.0	22.3	36.9
Canned beans (metric tons)	-	-	-	2,195	6,598
Tomato paste (metric tons)	-	-	-	554	-
Potato chips (metric tons)	-	-	-	-	147
Soft drinks (carbonated) (million of liters)	74	83	97	108	101
Bottled water (thousands of metric tons)	33.6	60.0	83.4	100.0	119.0
Fruit drinks and syrups (thousands of liters)	4,147	3,646	16,694	20,460	48,734
Milk and yoghurt (thousands of liters)	977	3,817	10,307	18,167	22,145
Ice cream (metric tons)	379	448	662	785	701

Source: *Statistical Yearbook 1985, CPO.*

The following figures show the output and performance of the food processing industry between the base year 1981 and the year 1985:

Rank	Output product	Percent growth
1	Milk and yoghurt	2,167
2	Fruit juices	1,075
3	Bottled water	254
4	Canned beans	201
5	Ghee and edible oil	156
6	Biscuits and confectioneries	131
7	Ice cream	85
8	Bread	60
9	Soft drinks	36

These results indicate high demand in the market for processed food. The food processors, realizing the market demand, invested in either new food processing projects or expansion of their existing plants. With the increase in the output capacity of the food processing plants in the country, food processors like the Hayel Saeed Anam Group started other support manufacturing plants to produce such items as cans and packaging materials. Several of the food processors are involved in processing more than one food product. Several existing processors and new investors have applied to the Ministry of Economy, Supply, and Trade to expand existing plants further or to establish new food processing plants.

Besides food processing plants, the other processing plants operating in the country are the three livestock abattoirs in the cities of Sana'a, Hodeidah, and Taiz and one rendering plant, that is associated with the Sana'a abattoir and produces feed concentrates from by-products of the abattoir. All these processing plants were developed with grants from the Dutch government and are now operated by the Ministry of Municipality and Housing. Five more abattoirs are planned for the Third Five-Year Plan (1987-1991) in the other main urban areas.

The obstacles faced by the processing industry are similar to those faced by the private sector as a whole in Yemen:

- Import controls, foreign exchange controls, and controlled tenders for imports of some basic raw materials
- Excessive bureaucracy in obtaining project approvals and imports licenses
- Limited availability of credit
- Lack of accurate data and information
- Price controls

It is critical for the government to note that the criteria for evaluating applications for processing plants should not be the availability of locally produced raw materials, but the value-added to the economy and the resulting import substitution. Existing processing plants have developed significantly. With the gain in maturity through the learning curve combined with the state-of-the-art technology of some of the local plants, they are now competitive and have started exporting, although all raw materials are imported.

The Main Processing Plants in the Country

Table 3 covers the main processing plants in operation in the country.

Agribusiness Support Services

This subsector of the agribusiness sector addresses the essential support services, without which the smooth development and well-being of agribusiness is hindered. The key support services covered in this study include the following:

- Maintenance and repair services
- Veterinary services

Table 3. Food Processing Industries Operating in Yemen, 1987

Processor	Products	Licensed brand	Remarks
National Dairy Co. Ltd, Taiz	Reconstituted UHT milk	-	Part of the Hayel Saeed Anam Group. Estimated capacity for dairy products is 20 million liters annually. License from Holland.
	Yoghurt	-	
	Milk flavored drinks	-	
	Evaporated milk	Dutch Boy	
	Canned vegetables	-	
Yemen Company for Ghee and Soap Industry, Taiz	Vegetable oils	-	Part of the Hayel Saeed Anam Group Estimated 1986 output is 65,000 MT.
	Ghee	-	
	Canned butter	-	
Bilqis Biscuit Confectionery Co., Taiz	Biscuits	-	Estimated output: Biscuits and wafers 6 MT/shift Candies 4 MT/shift
	Wafers	-	
	Hard candies	-	
Fardoos Bottling Plant Co., Taiz	Concentrated juice	Sunquick	License from Holland.
	Squash	-	
	Ribena	Ribena	License from Unilever.
Red Sea Flour Mill, Hodeidah	Wheat flour		Utilizes input of 520 MT every 24 hours. Plans to expand capacity to 1,400 MT/24 hours.
Abdallah Qaeed Seif Co., Hodeidah	Vimto drink	Vimto	License from UK. Estimated capacity is 350,000 cases/year of 12-750 M bottles.
Yemen Co. for milk and juice manufac- turing (Yemany), Hodeidah	Reconstituted UHT milk Yoghurt & buttermilk Ice cream Fruit flavored drinks (juices)		Belongs to Thabet Brothers Group. Estimated annual capacity is 15 million liters.

(continued)

Table 3. (Continued)

Processor	Products	Licensed Brand	Remarks
National Co. for manufacturing oil and ghee, Hodeidah	Ghee Vegetable and corn oil	- -	Part of Thabet Brothers Group. Estimated capacity per shift is 15,000 MT.
United Company for Industry & Frozens (NANA), Hodeidah	Reconstituted UHT milk	-	Estimated capacity is 10 million liters annually.
	Yoghurt	-	
	Ice cream Fruit drinks (juices)	- -	License from Austria.
	Rauch		
Yemen Co. for Industry & Commerce (YCIF), Taiz	Biscuits	-	Part of Hayel Saeed Anam Group. Produces around 60 varieties of biscuits. Estimated 1986 output is 61,000 MT working 3 shifts a day.
	Wafers	-	
	Candies	-	
	Infant biscuits	Buitoni	
	Tahini	-	
Pasta	Buitoni		
Yemen Snack Food Manufacturing Co., Sana'a	Potato chips	Noaman	Licensed from Children's TV Program, "Iftah Ya Simsim." Estimated capacity 140 MT/shift.
Al Thawra industrial Complex, Sana'a	Vegetable oil	-	Estimated capacity: Vegetable oil 100 MT/shift Ghee and margarine 5 MT/hr
	Ghee	-	
	Margarine	-	
Yemen Beverage & Industrial Co., Sana'a	Soft drinks	Seven Up	Seven Up is produced under license. Capacity for soft drinks is estimated at 2.6 million cases annually.
	Fruit drinks (juices)	-	
Yemen General Grain Corp. Bakeries, Sana'a	Sliced bread	-	A public corporation with two bakeries located in Sana'a and Taiz. Each bakery produces 5 MT/day of bread.
	Rooty	-	
	Buns	-	

(continued)

Table 3. (Continued)

Processor	Products	Licensed Brand	Remarks
Dirhem Industrial Co., Hodeidah	Soft drinks Canned juices	Sinalco	Licensed from West Germany. Total capacity is 182 million liters annually. Estimated capacity is 29,000 MT/year.
Military Economic Corp. Bajil Vegetable Processing Plant, Bajil	Tomato paste Canned vegetables		
Yemen Bottling Industry, Taiz	Soft drinks Bottled water (soda)	Coca Cola	Produced under license. Also produces orange drink. Soft drinks capacity is 1.4 million cases annually.
Yemen Co. for Beverages Industries, Sana'a	Soft drinks	Pepsi Cola	Under license. Produces orange flavor Mirinda. Capacity 1.9 million cases annually.
Hodeidah Bottling Co., Hodeidah	Soft drinks	Canada Dry	Under license. Produces three flavors: orange, cola, and lime. Capacity is 3.3 million cases annually.
National Beverages Bottling Co., Sana'a	Soft drinks	Canada Dry	Under license producing three flavors: orange, cola, and lime. Capacity is 5.5 million cases per annum.
Arwa Mineral Water Co., Sana'a	Bottled water		Produces 1.5 liter and 0.75 liter bottled water. Annual capacity of 55 million liters.

(continued)

Table 3. (Continued)

Processor	Products	Licensed Brand	Remarks
Al Nahdein Mineral Water (Hadda), Sana'a	Bottled water	-	Produces 1.5 liter and 0.75 liter bottled water. Annual capacity of 25 million liters.
Azal Industrial Development Co., Ltd., Sana'a	Bottled water	-	Annual capacity is 25 million liters.
Ma'een Mineral Water Co., Al Jarrahiya	Bottled water	-	Annual capacity is 25 million liters.
Katen Brother Trade & Industrial Co., Ltd., Sana'a	Macaroni	-	Capacity unknown.
Sana'a Food Industrial Co., Sana'a	Corn puffs Candy bars	-	Capacity unknown.

Source: Ministry of Economy, Supply and Trade records and survey data.

- Consulting services
- Testing laboratories services

Maintenance and Repair Services

The maintenance and repair services industry in Yemen is still rudimentary. These services are generally performed by small private repair shops, which are poorly trained and equipped. Preventive maintenance is not routine; repairs are undertaken after a malfunction has occurred. Besides the small repair shops, there are only two known workshops that are fairly well equipped, but they still lack trained and skilled manpower. The overall inadequate state of the repair and maintenance services may be attributed to the following:

- Poorly equipped shops
- Lack of properly trained technicians
- Lack of awareness of the concept of preventive maintenance
- Low standards for repair services

Some limited maintenance and repairs services are in operation within the agribusiness industry. These exceptional cases are observed within a few of the processing plants, which have managed to develop a high cost, in-house capability. About 21,000 farm tractors operate in the rural regions. The owners suffer from the absence of such services in the rural areas, and have to transport their tractors long distances to obtain substandard services from tractor dealers at excessive costs.

Veterinary Services

This service industry is important for the development of the livestock and poultry industries within the agribusiness sector. To date, the availability of veterinary service in Yemen is very limited: a team of six or seven

expatriates is available from a British veterinary service aid program. The difficulties reported by the only veterinary project to serve the whole country include the following:

- Inadequate funding
- Delay in payments
- Complex customs clearance procedure
- Inadequate qualified staff

Large commercial investors may be able to arrange their own in-house veterinary service capability, but the issue becomes critical for the small and medium producers. Furthermore, without adequate veterinary services, the livestock and poultry industry will face grave problems in development. The development of at least the following basic veterinary services is necessary:

- Preventive veterinary medicine service
- Diagnostic veterinary laboratories
- Veterinary clinic services
- Supply of drugs

The private sector has fairly good investment potential in this field of services, but is currently curtailed by constraints such as the following:

- Lack of professional veterinarians
- Ministry of Agriculture and Fisheries monopoly in this field of services
- Import controls and regulatory issues limiting the imports of drugs and medicines

Only two private sector veterinary drug and medicine suppliers are known to exist, both established recently. Their activities are limited in spite of the large market demand because of the constraints outlined above. The two enterprises are

- Agri-pharmacy, of Al Watania Poultry Services Co., Ltd.
- Veterinary Clinic, of Jahran Poultry Co., Ltd.

Consulting Services

In Yemen, both the private sector and the public sector are in dire need of good, local, professional consulting services. There are no organized and well-established local consulting firms. Vendors (manufacturers) often undertake feasibility studies on behalf of investors; however, their perspective is often clouded by the opportunity to make a sale of machinery or equipment. This situation has led to high rates of failure on projects because of technical or management inadequacy or the nonviability of a project.

Test Laboratory Services

Although this service industry has a potential for smaller investments than the other agribusiness subsector industries, its existence is vital. The importance of test laboratory services may be seen in the following brief list of services:

- Diagnostic biochemical laboratory for tests and analyses of any of the following important matters associated with the agribusiness sector:
 - ▶ Plant and animal disease
 - ▶ Hygienic standards of products from food processors and slaughter houses
 - ▶ Toxic chemicals in edible foods
 - ▶ Nutritional composition of processed foods or animal feeds
- Soil and water analyses and tests to identify problem areas and deficiencies that need to be addressed such as
 - ▶ Water salinity
 - ▶ Soil nutrient contents

- ▶ Soil types and suitability to farm production
- ▶ Water chemical solubility (e.g., water hardness)

The costs for undertaking such tests and analyses are small relative to the overall investment in commercial agribusiness projects. The benefits from these services are substantial and could determine the level of profitability for any agribusiness venture. The local availability of such services in Yemen are negligible. Also, the importance of such services are not fully perceived by people in the agribusiness sector. The limited services currently available are operated and controlled by the Ministry of Agriculture and Fisheries:

- The Agricultural Research Authority does soil and water tests and analyses, but their capability and reliability are limited by
 - ▶ Limited qualified personnel
 - ▶ Limited laboratory equipment
 - ▶ The purpose of their work, which is research, not the commercial provision of such services
- The plant disease and protection agency is also limited by
 - ▶ Lack of qualified personnel
 - ▶ Emphasis of their work on research and quarantine controls
 - ▶ Limited laboratory facilities
- The British Veterinary Program has the only diagnostic laboratory for animal diseases in Sana'a, and it is small.

The potential for development of agribusiness services through private sector investment is substantial. This subsector should be given incentives and encouragement like those given to the productive sectors under Investment Law No. 18. Import controls on equipment and other essential requirements for this subsector should be removed.

III. THE PRIVATE SECTOR IN THE YEMEN ARAB REPUBLIC

Overall, the changes that have taken place within the business environment in the country over the last decade and a half have outstripped changes in management and other business structural systems. Limitations in local management, and in legal and technical professional availability restricted the private sector's ability to cope with the situation.

Both the private sector and the public sector have been slow to adapt to and cope with demanding environmental and economic changes, which has strained the roles of both sectors. This situation has contributed to an antagonism between the two, which has raised barriers to communication.

Limited professional capabilities have led to many arbitrary and contradictory economic and regulatory measures. The public sector's attempts to contain the problems and bring about positive economic changes for recovery have been frustrated. This frustration has provoked the public sector to blame failures on the private sector's greed and uncooperation. The public sector has interfered further by placing more isolated and stringent economic measures and controls on business activities of the private sector. Using the private sector as the scapegoat for chronic economic problems has led to bickering between the private sector and the public sector, with the following results:

- Ties and cooperative agreements have developed between special interest groups in the public sector and a handful of private sector enterprises to reap financial benefits from the opportunities created by tighter economic controls. Such relations are often between relatives and clan members.
- Corruption has become chronic at all levels in the public sector. A recent example: employees in the Ministry of

Economy, Supply and Trade forged import licenses and sold them to certain private sector enterprises.

- The antagonism between the public sector and private sector is blurring the distinction between their appropriate roles, as public sector corporations get more involved in business matters.
- The government policy of encouraging private sector investments in agribusiness projects has become empty media rhetoric without the essential accompanying incentives, reduced bureaucratic procedures, and lifting of unnecessary regulatory policies.

As in most developing countries, there is a bias toward investments with a short-term payoff. The traditional trading economy did not see investments in anything longer than one or two inventory cycles. Such short-term investments do not require technical and management skills. In an uncertain political and policy environment, investments tend to be very short term.

Investment in agribusiness was limited by the common perception that agribusiness requires large initial investments and a long-term payoff. The uncertainty concerning the potential returns in agribusiness is largely attributed to the absence of accurate and reliable information and the lack of knowledge in agribusiness.

Typically, the family-dominated enterprises in both the urban and rural areas, are run under a traditional family management system. The larger family businesses are mostly located in key urban centers. Associated with the traditional family management system are the following characteristics:

- They are run under patriarchal leadership with minimal delegation of authority, especially to non-family members. Similar situations prevail among the small and medium-size enterprises in most of the country.
- Delegation of authority is rare, especially to non-family staff. This situation has led to limited development of skilled mid-level management in family businesses, raising barriers to the career advancement of non-family employees and undermining their motivation.

- The important criteria for evaluating a non-family member as a potential employee are the applicant's family background, recommendations given by someone close to the employer, the clan or tribe the non-family member belongs to, and his track record of employment and loyalty with his former employer or competitor.
- The reluctance to develop management by delegation of authority has substantially limited the growth of family businesses. As a result, where large family business have undertaken diversified investments into other lines, such investments are normally small to medium in size in relation to family assets and wealth.
- There is a substantial need to develop management programs directed to younger generations of family members, covering training in administration, marketing, finance and accounts, and project planning and development.

The private sector in Yemen has had limited experience with domestic or foreign joint ventures. The reasons for this are

- Lack of knowledge and understanding of legal, financial, management, patent, and trademark dimensions involved in international trade and joint ventures with foreign partners.
- Excessive emphasis on foreign products, know-how, technology, and foreign expatriates without clear ideas about local adaptability and assimilation. Little confidence is given to local experts who have appropriate qualifications and competence, although their role is vital to cross-cultural understanding of the international business transaction.

The family businesses based in the key urban centers, particularly those in the capital city of Sana'a, have advantages over those in other regions of the country:

- The enterprises in urban centers have better access to foreign products, know-how, and technology. They are able to acquire representation or expertise from foreign firms.
- They are in a better position to cultivate the essential channels of influence through connection and contacts with the government agencies and support agencies that control the business environment.

Business loyalties show the same pattern of loyalty first to family, then to clan, and then to tribe. The outcome from these characteristics include the following:

- Businessmen are very independent minded, and indicate open-minded attitudes to new ideas (especially those proven successful), in order to establish a successful track record, and in turn, gain the confidence and trust of others. Consequently, most are excellent emulators and ready to learn from the mistakes of others, a sign of their innate entrepreneurship.
- Small and medium-size enterprises tend to be highly suspicious of the large family businesses, viewing them as barriers to their growth and success.
- The attitude of distrust normally extends to foreigners until a level of confidence develops from tangible business dealings.
- Under the existing relationships of distrust and patriarchal management, a joint venture partnership in business development among a number of local entrepreneurs has normally been difficult to achieve. Where such ventures have been attempted, power struggles between the partners have often developed, causing the project to fail. Consequently, although the local commercial law permits stock holding companies, social interactions have limited the development of such companies.

Some members of the private sector have accumulated substantial wealth, but do not normally display wealth in their way of living or business operations.

IV. FINDINGS AND CONCLUSIONS ON CONSTRAINTS ON AGRIBUSINESS DEVELOPMENT

The development of the agribusiness sector will require the active participation and collaboration of both the private sector and the public sector. The problems and constraints facing the agribusiness sector are not the problems of this sector alone, but reflect the problems of business development in the whole Yemeni economy. The agribusiness sector cannot be dealt with in isolation. There are additional sectoral issues, and their resolution also has implications for the rest of the economy. The problems and potentials are part of a large package, and actions taken in one sector of the economy must take into consideration the impacts on other sectors. We cannot afford to select individual items for reform or change in isolation, because any actions will have side effects that either reinforce or negate the original action.

General Conclusions

- The vast majority of businesses in the country are family run. The modern corporation with professional management and widely dispersed shareholders has not made much impact on the Yemeni economy. Any program to support business development must recognize the implications of this situation for project initiatives.
- The overwhelming majority of businesses in the country are small, even where family assets are large. Instead of expanding the size of existing businesses, individual businessmen start new small and medium-sized enterprises; therefore, any program aimed at private sector business development should concentrate on small businesses and start-up operations.
- There appear to be abundant opportunities for private sector investments in agribusiness. Profit margins are generally attractive. There appears to be no pressing need for any subsidies aimed at encouraging the development of the sector.

- Mutual distrust and resentment seems to exist between businesses in the private sector. This feeling has discouraged collaboration even where mutual benefits are to be had. Small businesses are particularly hostile to larger businesses.
- Yemeni businessmen are very independent, open, and spirited. There is a wealth of entrepreneurial initiative, so an entrepreneurship development program is probably unwarranted.
- Even though the financial system in Yemen is relatively undeveloped and Yemen is considered among the poorest countries per capita in the world, there is good evidence that lack of capital in the private sector is not a serious constraint on agribusiness development.
- Foreign-made products have an image of higher quality, which will be difficult for local producers to overcome even with price advantages. There are opportunities for local manufacturers to improve quality through higher standards for production specifications and improved inputs through such means as licensing.
- The agribusiness sector faces constraints in the availability of inputs, both from domestic sources and from imports.
- Agricultural producers have little knowledge of the appropriate use of agricultural chemicals.
- The distrust of individuals outside of the family, clan, or tribe extends also to foreigners, including donor nations. Any program initiatives from donor agencies or suppliers of technology and know-how will have to be packaged and presented carefully so they will not be misinterpreted or disregarded.
- Information for making appropriate business decisions is not readily available to decision makers. This is especially true of foreign technology and foreign markets.

Market Development

- The distribution system for agricultural inputs is poorly developed, even though it has recently shown impressive growth and improvement.
- Because of the limited availability of agricultural produce and processed foods, substandard products are able to command premium prices.

- The agricultural marketing and distribution system is very poorly developed: there is little price information for marketers, inadequate transportation, insufficient storage, and rudimentary packaging. There is almost no unit pricing in perishable commodities.
- There are virtually no quality grading standards for fresh produce. During periods of scarcity, all produce is sold at premium prices. During harvest supply gluts, it is apparently not worthwhile for producers to grade and sort. Quality grading and pricing can be expected as supplies increase relative to demand and as competition at the wholesale and retail levels increases.
- Marketing losses of fresh produce are high because of physical damage, withering, and bruising, resulting from inadequate transportation and packing materials.
- Food consumption habits, tastes, and preferences in the country are changing fast, and locally produced items are unable to satisfy such changes.
- Demand for and supply of fresh produce have increased substantially in the last few years. Demand is anticipated to consume available supplies in most products for the foreseeable future.
- The quality of most agricultural produce is below international standards, and yields are below international averages.
- The ban on imports of fruits and vegetables has allowed domestically raised produce to command premium prices in the market.

Policy and Regulatory Environment

A distinction needs to be drawn between the policy environment and the regulatory environment. The officially stated policy of the government is to encourage the development of the private sector. When this policy directive is translated into specific regulations, however, the regulatory environment often proves to be less hospitable. Businesses do not operate in the policy environment, they operate in the regulatory environment. It does not matter to a businessman what the government has put in the Development Plan or what policy statements from high-ranking ministers appear in the newspapers. What really matters is getting foreign exchange or getting the import license. It is immaterial to the businessman what policy statements have been made if

he cannot navigate through the complex regulations that result from the policy directive.

A number of questions relating to the basic economic development strategies need to be re-examined. Prime among these are the interrelated questions of valuation of the exchange rate and comparative advantage. By adjusting the exchange rate to a particular level, a case can be made for self-sufficiency in almost any product or commodity. Thus, the exchange rate can be used both as an instrument of development policy and a means of allocating foreign exchange.

It is unclear whether the policy of totally banning the import of fruits and vegetables is consistent with the comparative advantage of agriculture in the Yemeni economy. For example, growing bananas is profitable because of the import ban, but bananas require large amounts of water. It is not clear whether economic rationality would encourage Yemen to become self-sufficient in banana production. Policies that are unclear and need clarification include

- The appropriate roles for the private sector and public sector in economic development
- Exchange rate policy
- Food security, self-sufficiency, and import substitutions
- Export promotion policy

Promotion of a stable business environment depends on the proper management of the economy, which involves questions of fiscal policy, monetary policy, tax policy, and exchange rate policy. Running a budget deficit, for example, undermines the integrity of many of the proposed reforms. Using the taxing and budgetary authority to underwrite the losses of state-run enterprises both displaces opportunities for the private sector and increases the tax burden on the private sector, which must underwrite the losses of the state-run corporation. Thus, the private sector loses twice.

A budgetary deficit risks increasing the money supply if off-setting steps are not taken by increasing the sale of treasury bills. Increased money supply encourages inflation, which in turn encourages investment in unproductive enterprises such as real estate, and discourages investment in productive ones such as agribusiness projects.

Inflationary pressures in the economy increase the demand for imports as imports become cheaper than locally produced goods. This generates more pressure on the availability of foreign exchange to finance imports. With foreign exchange reserves that are inadequate to satisfy increased demand, the government relies increasingly on other mechanisms such as import licensing requirements to sustain the exchange rate. These restrictions hurt the development of the business sector and the agribusiness sector.

The regulatory environment has created a sense of uncertainty and insecurity within the private sector. Some of the contributing factors are

- Withholding information and data necessary for investment decisions
- Inconsistencies between the investment law and company law regarding the level of foreign equity participation permitted
- The cumbersome and time-consuming duty drawback system
- Tax assessments that are sometimes arbitrary and not applied uniformly from one business to another
- Price controls that are not enforced on imported goods as they are enforced on domestically produced goods
- Import restrictions and import licensing procedures that are often arbitrary
- Many commercial laws, including Investment Law No. 18, that allow government officials to change the application of the law by decree
- The lack of established grievance procedures for unfair enforcement of laws
- Double customs duties are sometimes imposed on imported goods. Regular duties are levied at the port and the same

duties are levied again at internal checkpoints unless it can be proved that the goods have not been smuggled.

- Inconsistencies in the tariff structure: duties on raw materials sometimes are higher than duties on finished products; for example, finished poultry feed is subject to a lower tariff than the raw materials
- Arbitrary import restrictions, which have led to smuggling
- What appears to be a high and counterproductive internal transportation cost structure, imposed with government approval

The policy of encouraging the growth of the private sector is contradicted by government actions that encourage public sector enterprises. Public sector corporations are involved in horticultural nurseries, grape storage, food processing, and veterinary medicine. The Agricultural Credit Bank has entered the business of importing agricultural inputs, in direct competition to the private sector.

Import restrictions have allowed a few business enterprises that are influential to procure import licenses to achieve windfall profits. Profits accrue to those who have political influence, not to those who contribute value added.

Private sector investments are subject to extensive and often unnecessary review by the government. Investment projects under Investment Law No. 18 require approval from the Ministry of Economy, Supply and Trade; obtaining this approval is a cumbersome and time-consuming process with no apparent value for the private sector business. For agribusiness projects, it is unclear whether the authority for approval lies with the Ministry of Economy or the Ministry of Agriculture.

Approval of an investment project requires presenting a feasibility analysis. Government officials are not qualified to verify the feasibility of a project, and there are no known instances of government officials providing helpful advice on project feasibility. There were reports of leaks to competitors of proprietary information contained in applications for project

approval. Additional reports alleged that baksheesh was necessary to receive timely approvals. For those private sector investors with no contacts, securing project approval is an excessively time-consuming and costly procedure. An instance was reported in which the applicant did not get approval after a lapse of 1½ years and no reasons were offered for the delay.

The Central Bank recently imposed regulations regarding private sector use of foreign export credit or suppliers credit to import fixed capital goods or raw materials. An investor wishing to use U.S. Export-Import Bank credit must notify, and channel the loan through, the Central Bank. This involves opening a letter of credit through a commercial bank against such a loan under the following conditions:

- When opening the letter of credit, the enterprise must place a deposit of 35 percent of the value of the letter of credit in local currency with the commercial bank, and the bank in turn is required to transfer those funds to the Central Bank.
- The enterprise has to pay in local currency the next 35 percent of the value upon receipt of shipping documents.
- The balance of 30 percent of the letter of credit value is to be settled over a period of six months in equal installments.

In this case, the real borrower becomes the Central Bank, which settles the loan after the specified loan period. The private businessman, who was required to repay the loan completely within six months, is also required to provide a pledge to the Central Bank, through the commercial bank that opened the letter of credit, that he will bear all foreign exchange risks and losses accrued by the Central Bank upon the maturity of the loan. This discourages private businesses from accepting loans in foreign currency from foreign lenders. Complex foreclosure procedures make banks more reluctant to loan money, even where collateral is available.

The net result of these regulatory and policy obstacles is that

- The environment systematically discriminates against and penalizes the small to medium businesses.

- Businessmen perceive that government policies and regulations are constantly changing and are biased against the private sector, thus discouraging long-term investments and favoring a short-term trading mentality.
- Communications and information flow between the public sector and the private sector is poor.

Management Dimensions

Management systems in businesses are generally family run. Non-family members in the business have limited career advancement opportunities. There is little delegation of authority in most businesses and in the public sector. Top managers were seen to be personally approving the smallest expenditures and not taking the necessary time to plan. Thus, most organizations lack middle management skills, both because of the scarcity of trained manpower and because of the reluctance to develop management by delegation of authority. Businesses depend heavily on foreign skilled manpower.

Because of the reluctance to delegate authority to non-family members, the size of the business operations of the largest families is self-limiting. This restriction can allow small businesses to take advantage of market opportunities that would otherwise be dominated by the few largest family businesses.

Foreign firms that wish to enter the Yemeni market must select one of the prominent Yemeni families to collaborate with, if they hope to be able to negotiate through the complex bureaucratic environment. This makes the foreign firm dependent on the Yemeni family and their goodwill and ability to perform. Because Yemeni family businesses are run hierarchically, an arbitrary decision by a key family member could put the investment of the foreign firm at risk. Rivalries between key personalities have limited the ability of prominent Yemeni families to collaborate in business ventures. Foreign firms want to avoid making any major investments that may be placed at risk, and therefore can work closely with only one family.

Yemeni businesses have very little experience with foreign joint ventures. Businessmen profess to be seeking joint ventures with foreign companies, yet have unrealistic expectations about the relationships between the joint venture partners, further complicated by their lack of understanding of such issues as licensing, franchises, management contracts, trademarks, and the associated legal obligations.

Generally, businessmen are unaware of opportunities available to them in foreign markets in areas of technology and know-how. Foreign equipment vendors have sold a lot of inappropriate equipment by offering to do "feasibility studies" that take advantage of the lack of knowledge on the part of the Yemeni businessmen.

The investment attitude is skewed toward short-term payoffs, because of the prevailing uncertainties and the high rates of return that are generally realized under the present economic conditions and regulatory environment. Agribusiness investments are generally perceived to be long-term investments with long payoff periods. This may be because agribusiness is perceived to be limited to the farm production subsector and to exclude the other subsectors such as processing, and marketing and distribution.

Most businesses visited showed a need for improvement in management training, marketing, cash management, inventory control, accounting, and so on. Businessmen are eager to collaborate with donor agencies such as USAID in private sector development programs, but expressed strong preference for dealing directly with the donor organization rather than through the Yemeni government. Most are unaware of any private sector programs like those of the USAID. A visible display of solidarity would boost businessmen's morale in what they perceive as their battle against government encroachment.

Support Institutions

The support institutions for private sector businesses are rather limited in scope and relatively undeveloped. They are heavily influenced by the government. Trade associations are weak. The only institutions representing

the private sector are the chambers of commerce and industry, which are relatively ineffectual. The federation of the Yemeni Chambers of Commerce and Industry is weakened by bickering among the various chambers on the issue of leadership. Small businesses are not substantially benefitting from institutions such as the Chambers of Commerce and Industry, banks, and other support agencies.

The agribusiness sector is liberally sprinkled with state-run and parastatal organizations, but they often compete directly with private sector efforts. Private entrepreneurs and government officials do not have a clear idea of appropriate roles for the private sector and public sector.

There is no credit reference bureau in the country. Financial institutions are not trusted by many businesses, although these businesses may not even maintain checking accounts. Banks are reported to not give working capital loans. Most loans are reported to be short-term loans that are periodically rolled over to finance long-term needs; this practice exposes businesses to risks.

Banks generally do not have the in-house expertise to appraise agribusiness loan prospects. To protect themselves, bankers require personal guarantees, mortgages, and other collateral far in excess of normal prudent requirements. Banks have been reported to grant far less credit on a project than was required, thus putting the project in a danger because of undercapitalization. Suppliers of goods in the market often extend credit terms to their customers. In effect, the supplier becomes the banker for the small businessman by supplying him with working capital.

There is no bonded warehouse in the country to facilitate the timely entry of imported goods such as agricultural inputs, raw materials, and spare parts. Using warehouse receipts as collateral for financing small businesses is not done in Yemen.

Natural and Social Limitations

Water for irrigation is a serious limitation on agribusiness development. Most farm production depends on rainfall, but only a small region of the country gets rainfall in excess of evaporation rates. The increasing number of boreholes is depleting the subterranean water aquifer, and drilling deeper boreholes only increases the cost of irrigation water. Despite the higher rainfall rates in the mountain regions, most of the rainwater is lost from runoff. Wind and water are eroding soil, destroying much of the arable lands. Poor agricultural practices and the inappropriate use of windbreaks have further complicated the erosion problem. Groundwater salinity is increasing. Tropical and semi-arid regions like Wadi Al Jawf, Marib, and many parts of the Tihama have problems of high soil salinity. Because water is limited, leaching soil salinity is very difficult.

The land holding system has become a serious constraint on agricultural development. The farm holdings are highly fragmented and average about 2 hectares per farm holding. This situation limits commercial farming potential:

- Land for large commercial farming becomes prohibitively expensive, because the investor has to accumulate many small lots; owners of the small lots continually raise prices.
- Land inheritance and distribution of the land among the heirs by the Sharia (the Islamic Law) involves many complications that hinder the purchase of land.
- Because of extensive speculation and holding wealth in the form of land, the cost of land compared with its agricultural productivity is prohibitively high.

Human resource availability is a problem for agribusiness sector development in Yemen. Rural farm labor migrates to urban areas within Yemen, because of the demand for labor created by sectors concentrated in those areas, and to neighboring oil-producing countries, because of the high demand for labor created by the oil boom economies. The result of this migration has been a decrease in the availability of farm labor, which increases

the labor costs and the farming work burden on women in rural regions. Remittance income from migrant labor allows farm families a higher living standard and strengthens the disincentive to farm.

The low level of skills development in the agribusiness sector is limiting the spread of modern technology in agribusiness and farm production. It is further hindered by the young people's negative attitude toward agriculture as a career compared with other professions in the key urban centers that have better opportunities. The decrease in labor force in the agriculture sector and limited manpower skills have raised a major obstacle to meeting the manpower needs for agribusiness sector development.

V. RECOMMENDATIONS FOR AGRIBUSINESS SECTOR DEVELOPMENT

Although the National Constitution and the National Charter of the People's Congress have both taken the position that the economy shall follow a free market system, there are numerous examples of actions taken by government agencies and departments that directly contradicted the official policy position. With the export of petroleum, the government will be acquiring additional revenue with which to finance its programs. The government will now have the means to support a number of new initiatives, and this could be either constructive or destructive. The time has come to evaluate the role the government is playing in the economy.

Redefining the Role of Government

The government needs to change its strategy for developing the economy from one of direct action and interventions to one of supporting and facilitating the efforts of the private sector. This is a change in the concept of the role the government should play in the economy.

The approach taken by the government toward the development of the economy has been direct and interventionist. A number of direct action programs, investments, and projects have been undertaken to promote the development of target sectors of the economy, and in particular the private sector. The underlying philosophy of each of these efforts is that the preferred method of dealing with a problem is to initiate a government program or set up a government organization.

Adoption of a noninterventionist strategy involves acknowledging that some functions are best performed by the private sector and that government

should limit its involvement to areas in which it has a unique capability. This change would have a number of important implications for existing and future programs:

- Government participation in commercial activities that compete with, or displace, the private sector needs to be reduced or eliminated. Government has inserted itself into commercial activities such as banking, marketing of agricultural products, agricultural production, and a number of other related areas of agribusiness. This leads to a tendency to overregulate and limit the growth of any private sector firms that are active in the same line of business. More ominously, in state-run enterprises, political favoritism becomes part of the process of providing credit or setting prices. Favoritism leads to financial losses in some of the state-run enterprises and creates uncertainties in the private sector that limit its growth and create new tax burdens for the government. Although there may have been a legitimate need for direct government involvement in commercial activities at one time, it is highly doubtful that justification still exists, and the unanticipated side-costs are outweighing any benefits.
- The regulatory environment needs to be liberalized to facilitate private sector initiatives and minimize the required approval processes. While maintaining a positive policy environment, government has adopted an active regulatory stance with measures such as price controls, interest rate controls, exchange rate controls, licensing requirements, and business permits. The net effect of these regulatory controls has been to distort market forces and discourage private sector investment in spite of an outwardly positive policy environment. It is necessary to deregulate and liberalize the regulatory environment to be more consistent with the stated policy objective of encouraging private sector growth.
- Renewed emphasis must be placed on governmental provision of required infrastructure such as transportation networks, electricity, water, and communications. Government is uniquely qualified to develop infrastructure. The private sector is not equipped to provide these amenities, and private sector growth is not possible without them.
- Monetary, fiscal, legal, and trade policies supportive of a stable investment environment must be enacted. Government alone has control over these policies, but the impact is felt by the private sector. Lack of budgetary

control leads to government borrowing and leaves little capital for private sector investment. Government cannot legislate a sound currency, but must take appropriate actions to ensure faith in the currency and assure convertability. Government must provide a stable economic environment because uncertainty is deadly to long-term private sector investment.

The Role of USAID

Although Yemenis are hospitable to foreigners and hungry for foreign expertise, the nationalistic sensitivity must be acknowledged and dealt with if program initiatives are to be taken in the spirit intended. Any USAID program needs to be prepared to play a low profile, supportive role rather than a highly visible and active role, to help avoid the charge that any economic liberalization program is being imposed from outside.

The major problems in the agribusiness sector and with the private sector in general are those of the regulatory environment. Resolving these problems calls for a strategy of a broad program initiatives supported by specific projects. The program initiatives that are recommended are applied research, technical assistance, and information dissemination. Each of these initiatives is discussed below.

Applied Research

Research needs to be done to define more carefully the specific problems faced by the private sector, and to make recommendations regarding specific solutions. In the area of the policy and regulatory environment, the questions themselves are often sensitive and the answers are complex, demanding a sensitive approach.

A strategy that is recommended for USAID is to use studies to leverage additional donor resources. The World Bank is exploring several new loans for Yemen. The Germans, the Dutch, and the British all indicated an interest in the results of this study and any others which USAID might commission. By concentrating resources in areas where USAID has a comparative advantage by

virtue of the expertise available to it and the presence of a field mission, USAID can highlight areas for further donor involvement. An example is USAID/Niger, which sponsored a series of studies on agricultural policy reform. A series of policy changes was identified for policy dialogue discussions with the government of Niger. When the World Bank put a structural adjustment loan in place, the policy changes identified by USAID were incorporated as preconditions to the loan. When the IMF prepared a stand-by agreement, the policy conditions reflected the position of the World Bank, which had borrowed them from USAID. By financing a series of studies, USAID was able to leverage additional resources in support of the recommended policy changes.

The next sections describe research topics worthy of consideration, without making specific recommendations regarding how these studies should be implemented.

Macroeconomic Issues

Macroeconomic policies are not made in the Ministry of Agriculture, yet they have profound impacts on the agricultural and agribusiness sectors. Policy on issues such as exchange rate, taxation, investment, labor, as well as monetary and fiscal policy all have serious impacts, both positive and negative, on agribusiness.

It appears that the defense of exchange rates has led directly to the imposition of import restrictions which is increasing smuggling, government corruption, and uncertainty regarding the availability of imported inputs and raw materials. An overvalued rial has the effect of encouraging imports rather than local production, particularly in agribusiness, and of penalizing potential exporters.

At present, Yemen has relatively little foreign currency denominated debt, and a readjustment of the exchange rate would be relatively painless compared with a later time when substantial foreign debt might be accumulated. The terms of reference for a study should include suggested

means of cushioning the blow of any devaluation of the rial because some businessmen have incurred foreign currency denominated debt and would be ruined by any devaluation, even though the investment project might otherwise still be economically viable under a revised exchange rate structure.

An evaluation needs to be done of the international comparative advantage of the various Yemeni agribusiness subsectors. This evaluation has to be done in conjunction with the exchange rate policy study because the domestic costs of production are directly linked to the exchange rate used. For example, the policy of encouraging domestic development of fruit production by banning the import of fresh fruit has had the effect of increasing local production of all types of fruit, even though some types of fruit should probably not be grown in Yemen. Bananas, for example, are a tropical rainforest fruit yet banana production is thriving behind the import barrier. A study needs to be done soon because large investments are being made in crops that may not be economically appropriate.

The issue of economic value added should be addressed for the manufacturing and processing industries. The prevailing attitude stresses the use of local raw materials when the emphasis should be on what a particular industry or project can contribute to the economy.

A series of short, applied studies should be done on the economic and financial impacts of various regulatory practices including import licenses, price controls, the Central Bank's control of foreign credit like the GSM program for the private sector, project approvals and licensing with the associated bureaucracy, and government-controlled tender systems for imports, particularly on processing plants, raw materials, and poultry feed. For example, what are the economic costs of increased capital needs for businesses that are brought about by irregular and untimely issuance of import licenses and the resultant need for businesses to carry larger contingent inventories of imported raw materials? What are the costs in down time from the lack of imported raw materials as a result of import licensing practices?

Market Studies

Before foreign firms will make investments in projects which are to produce for the local market, they need to know what opportunities are present. A nationwide consumption study needs to be done to identify the levels of consumption, changing habits, tastes, and preferences, and their economic impacts on the agribusiness sector development. This would become a benchmark study and would be used as raw material for market development studies done by private businesses. The results of this study should be readily available in a format that can be used by market researchers.

Business consultants should do a series of market research studies that would provide profiles and prefeasibility analyses of market development opportunities and appropriate technologies. Some technical assistance might be considered in helping an entrepreneur set up the prototype business venture in a new area. The price for this assistance would be open access to other businessmen. Yemenis are good emulators and would soon follow successful examples.

Agronomic Studies

Agronomic and variety trial research such as the USAID deciduous fruit station at Al Irra should continue. Information from such trial research needs to be disseminated to the private sector, preferably in Arabic language pamphlets to be distributed through the chambers of commerce and industry.

Regulatory Studies

The legal codes and legislation associated with commerce and industry should be studied to evaluate the compatibility of the various existing laws and contradictions such as the one existing between Investment Law No. 18 and Company Law No. 106.

A study for legislation to encourage foreign investment should be undertaken, covering the following issues in the areas of technology and know-how transfer:

- Direct purchases of technology and know-how
- Protection of licensing, franchise, and trademark agreements
- Project management contracts

Many of the data available within the government channels appear inaccurate and unreliable. Any policy analysis based on these data is likely to be misleading. The research program should be aimed at making available reliable information on which policy decisions that affect the private sector can be based.

Information Dissemination

The results of any research reports should be published through the appropriate channels, and at least a summary of the study should be translated into Arabic. The chambers of commerce and industry are particularly appropriate recipients of the research results because their membership has a vested interest in seeing that business is regulated rationally and that public policy decisions are made on an informed basis.

A practical first step would be to make the results of this study available to the chambers of commerce for discussion. The offer should be made to finance translation of this study and sponsor a workshop or seminar on the issues raised. USAID should be prepared, if necessary, to play an invisible role in this process because of national sensitivities toward outside influences.

Active encouragement should be given to Yemeni businessmen to work with American businessmen and vice versa. The chambers of commerce and industry could be given subscriptions to

- Dunn and Bradstreet services

- Moody's manuals
- Thomas Register
- Technology and know-how publications of specific industries

This would provide a way to check the background of American businessmen who establish contact with Yemenis, as well as an excellent means of acquainting Yemenis with American firms active in areas of interest to Yemeni businessmen. Trade missions, exchanging information with U.S. trade associations, and offering support services to visiting American businessmen would also help establish mutually beneficial links.

A workshop or seminar should be sponsored through the chambers of commerce and industry in the country on practical issues and alternatives for privatization of parastatal organizations. USAID often approaches this issue from the ideological perspective while ignoring some of the more practical, but less sweeping measures available. For instance, the government is running a series of nurseries in which nursery stock is sold at less than the cost of production. At the same time, the government professes to be encouraging the private sector to take initiatives in nursery development. The nurseries we inspected were in sad shape, and no businessman would rationally consider purchasing these nurseries. The concept of running government nurseries under private management contract has not been considered. Neither has the concept of limiting the lines of stock that government nurseries carry and encouraging the private sector to carry non-competing stock. Another unexplored concept is that of limiting the production of government nurseries to present levels and adopting a free market pricing policy. These are examples of the kinds of initiatives that should be opened up for discussion. Also, the idea of government subsidies should be totally discouraged.

Technical Assistance

A program strategy should be adopted to strengthen institutions that provide essential support services to the private sector in agribusiness. In this

context, the development of new institutions is not recommended. The chambers of commerce and industry, the financial institutions, agricultural research and extension organizations, and the central planning organization's statistical data bank are among those support institutions which should be given priority.

The chambers of commerce and industry could be strengthened by a staff development program of training and first-hand exposure to activities of the chambers of commerce and trade associations in other countries where such institutions have achieved record success in the interest of private sectors. A modest grant of funds could be made to the chambers to allow them to finance practical studies documenting the impacts of various policy and regulatory practices, using the results for educating their own members, and forming the basis for lobbying campaigns with the government.

The interests of small businesses are largely being overlooked in the chambers of commerce. It is normal but not healthy for officers and staff of these organizations to cater to the interests of their more influential members. USAID should consider financing a small business institute within the chambers to focus the attention of the business community and the government on the special needs and priorities of the small business sector. This should include an information center for market opportunities, information on technologies, and a clearinghouse for contacts.

USAID should consider the possibilities of providing intensive training to members of middle and upper management in public administration who have positive views on the private sector, as a means of assisting the private sector in agribusiness sector development. The often ineffective, impractical, whimsical, and arbitrary nature of public policy decision making and management creates endless problems and investment uncertainties for the private sector. In most cases the government employee's attitude is not venal, but the outcome often has the same effect. This statement should be qualified by saying that the economic interests of some government employees will not be served by rationalizing and streamlining the regulatory environment because it would remove many opportunities for favoritism and personal income

enhancement. Other areas of public administration training should be in statistical and other data gathering, policy analysis, and planning and budgeting. This study was hindered by the lack of reliable data even though this study is not data intensive. Technical training programs like those given at the Ibb Agricultural Secondary Schools and other technical schools should be encouraged.

USAID should consider assistance for various government agencies in appropriate planning and development of programs in the following areas:

- Standards and measures issues at the recently established Department for Standards and Measures in the Ministry of Economy, Supply, and Trade
- The Industrial Department in the Ministry of Economy, Supply, and Trade in processing project approvals and licensing
- Extension service programs in the Ministry of Agriculture and Fisheries