

## Commercial irrigation farming

### *L'agriculture irriguée commerciale*

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#### Abstract

Commercial irrigation farming in Ghana can be better understood to involve farming companies or group farmers, able to produce on a continuous and sustained basis under irrigation and to supply their markets regularly, rather than by reference to the number of hectares irrigated. The large-scale farmers operate not more than 400 ha each for fruit crops like pineapples, papaya and banana; while the more popular scale is 25 ha and below, dominated by vegetable producers. Commercial irrigation is gaining ground in Ghana because of the attraction of the export market and its foreign exchange earnings, and the gradual improvements in local markets as a result of demand from agro-processors and expanding restaurant and catering businesses. Investment in commercial irrigation, however, is slow because of constraints such as high interest rates, land acquisition, high cost of investment in machinery and equipment, poor road network and the absence of providers of irrigation equipment and services in the country. Under the constraints, however, some companies such as Jei River Farms Limited and Volta River Estate Limited, have managed to operate successfully. The public and private sectors need to come together to resolve problems quickly to facilitate more investments in commercial irrigation.

#### Résumé

*L'agriculture commerciale au Ghana peut être mieux décrite en termes de la capacité des entreprises agricoles ou des groupes d'agriculteurs de produire et de satisfaire les besoins de leurs marchés d'une manière continue et soutenue, plutôt qu'en termes de nombre d'hectares irrigués. Les plus grandes exploitations qui produisent des fruits tels que l'ananas, la papaye et la banane ne dépassent pas les 400 ha ; mais la taille de la plupart d'exploitations maraîchères est inférieure à 25 ha. On assiste à une croissance de l'agriculture commerciale au Ghana attirée principalement par les possibilités d'exporter et de gagner les devis étrangers mais aussi encouragée par une expansion des marchés locaux, conséquence des fortes demandes de la part des secteurs de la restauration et de l'hôtellerie et de l'industrie de transformation des produits agricoles. Cependant, les investissements dans l'irrigation privée restent lents en raison de nombreuses contraintes : taux d'intérêts élevés, insécurité foncière, coûts onéreux d'équipement, mauvaise infrastructure routière, et absence des services d'appui conseils en irrigation. Malgré ces difficultés, certaines entreprises comme Jei River Farms Limited and Volta River Estate Limited, ont réussi. Il est donc important que les secteurs public et privé se mettent ensemble pour aborder et résoudre ces problèmes et de promouvoir plus d'investissements dans l'irrigation commerciale.*

#### 1. Introduction

The non-traditional export crop industry embraces small, medium and large producers. Some of them have had to install various systems of irrigation to ensure maximum, sustained, quality production to satisfy market demand and make a good return on investment. The increasing number of medium to large irrigated commercial farms is the result of exposure to the overseas market and the expanding local market. However, the export market and the emerging agro-processors are the major attractions for investment in commercial irrigation.

To satisfy demand and various requirements of the markets, irrigation is adapted to:

- Achieve high on-farm performance.
- Ensure sustainability of crop production.
- Ensure production of quality products.
- Ensure consistent and timely delivery to the market.

- Attract, enter and maintain favourable and reliable markets;
- Sustain the business as a whole.

There would have been many more irrigated medium to large-scale farms, but for several major constraints (e.g., land and infrastructure) encountered by investors, which will be the main target of this paper.

## **2. Crops and markets**

### **2.1 Crops**

In the 1980s several Ghanaian entrepreneurs undertook studies of the overseas markets for possible entry into them. The effort was purely private initiative, a trend which has continued until now. The contribution from the public sector has been minimal. The studies led to the identification of a limited number of crops which are currently being produced primarily for export, and for the local market. The leading crops are pineapples, papaya, bananas and vegetables and coming up are mangoes, cashew and passion fruit.

### **2.2 Export market**

The attractiveness of especially the European Union market is luring local and foreign investors into the export crop business on regular basis. Importers are also interested in Ghanaian produce because of price competitiveness and freshness. The nearness of the West Coast of Africa to Europe offers short shipment transit period, hence lower freight costs, shorter storage period, and longer shelf life of produce. Ghana has many advantages over several of her competitors and must, therefore, make the best of the opportunities available. While the private investor is working hard in this direction, there is the urgent need for the provision of appropriate public support, for full realisation of the potential benefits available.

### **2.3 Local market**

The local market for export crops is expanding daily as a result of:

- Increasing population and urbanisation;
- Expanding business in trade and tourism;
- Growing demand for restaurant and catering services;
- Establishment of agro-industries.

The two markets, export and local, serve as good incentives for investors to put their money into irrigation projects.

## **3. Irrigation systems**

Furrow, flood, sprinkler and drip irrigation systems are being used by farmers in Ghana. While the first three have been in practice for a very long time, the drip system was introduced toward the end of the 1980s and gained popularity in the 1990s.

Individual investors install systems best suited for their crops. However, the drip has turned out to be the most popular of all the systems because of the far better economic returns it offers farmers. The standard sprinkler types are also giving way to mini- or micro-sprinklers. The relatively high initial cost of installation of drip and mini-sprinkler systems has, for now, made commercial farmers the only ones patronising these types. The small-scale farmers continue to use the old systems.

#### **4. Commercial farmers**

It is not all the major commercial farmers in the export sector that use irrigation. The big operators belong to the pineapple and papaya groups. Since plastic mulch was introduced in pineapple production those who used irrigation on that crop, e.g., Gabro, have stopped. Tongu Farms, however, continues to irrigate its pineapples. The companies using irrigation can be divided into two major groups, namely fruits and vegetables. The fruit-producing companies such as Jei River, Paradise, Denlarry and Pawpaw Farms have papaya as their major crop, but some also handle crops such as passion fruit. All of them use the drip system. Some farming companies doing vegetables on commercial scale are Tacks, Param, Sweat, Vitanova, Motherwell, Gabro, Villa Dev and Debs Farms. Among these it is only Tacks and Gabro who use drip irrigation. The rest use standard sprinklers. The only banana producer, Volta River Estates uses mini-sprinklers.

The leading producer of papaya is the Jei River Farms. The company is so successful that, in addition to papaya it also accounts for about 30 percent of total pineapple exports. In 1999 Ghana exported 33,400 tons of pineapples worth US\$13 million.

Jei River Farms has achieved the leadership as a result of high financial investment in the farm and high level of managerial capability. Similarly Volta River Estates has also distinguished itself as the only producer/exporter of bananas. Volta River Estate might have done better if the issue of the EU market quotas had not placed restrictions on the company's exports earlier on.

#### **5. Investment in commercial irrigation—constraints**

The experiences and successes of the pioneers in commercial irrigation continue to inspire potential investors. With irrigation Ghana would have:

- Exported about twice the current volume of fresh produce;
- Earned more than three times the value of the exports in foreign exchange;
- Had many more people gainfully employed;
- Alleviated poverty among a fairly large population, and realised several other benefits if the problems discussed below could have been resolved.

The major impediments to medium/large-scale irrigation are many. The more important ones are:

- High cost of capital;
- Accessibility to land;
- Technical and managerial capability;
- Roads;
- Supportive infrastructure;
- Provision of irrigation services;
- Marketing.

##### **5.1 High cost of capital**

The high interest rates on agricultural loans have been discussed so often that it is mentioned here only to serve as a reminder. Investment in an irrigation project requires long-term financing. The high cost of finance readily puts off potential investors. Loan facilities from foreign sources which are operated in hard currency are attracting some exporting companies to make investments through such funds. However such foreign loans are not easily accessible to the average Ghanaian farmer.

## **5.2      *Accessibility of land***

Access to land is a very important constraint for investors in most areas of agriculture, from farm-lands to sites for agro-industries. Getting a suitably large parcel of land with a reliable source of water is not easy. When the land has been identified and selected as suitable for the project, then comes the issue of acquisition of the land. The intricate processes one must pass through to get land registered in one's favour have been a nightmare to many potential investors. Enormous difficulties are encountered in dealing with the land-owners (chiefs and family members), lengthy time delays, inflated fees to be paid to current users of the land, tips supposedly required to move things faster and the eventual paper work at the lands department. Many potential foreign investors have abandoned their projects in the course of acquiring land.

The steps being taken by the Government of Ghana to acquire and establish land banks will go a long way to solve these problems. Ghana can take note of the significant role foreign investment has played in the rapid growth of Cote D'Ivoire's agricultural exports, because it is much easier to acquire land in that country. It is hoped that the issue of irrigation will come foremost in the selection of sites for the land banks.

## **5.3      *Technical and managerial capability***

Many irrigated commercial farms do not have personnel with the requisite skills to operate and manage the farms. Irrigation requires specially trained field personnel; however, they are not available for several of the companies mentioned above. Farms operating with people without training are estimated to produce about 30 percent less than the more productive farms. The well-organised farms either bring in trained personnel from elsewhere or have the irrigation service-provider train them.

In addition to irrigation is the actual management of the farm as a business. The agricultural institutions need to lay more emphasis on farm management as well as having business management as part of the agricultural training curriculum.

## **5.4      *Feeder roads***

Most of the irrigated commercial farms are sited near Accra, for getting products either to the airport or the harbour on time and minimising damage due to the poor feeder-road network. The feeder-road system in the country places a major constraint on access to some of the best crop producing areas. Poor quality roads make transportation difficult for serious investors to reach those areas in the middle belt and northern part of Ghana, where better soils and more favourable ecological conditions for production exist. Developing more and better-quality feeder roads could positively influence investors in the development of more irrigation projects.

## **5.5      *Supportive infrastructure***

In addition to roads, fresh-produce farmers require trade support, infrastructure and services to handle their products efficiently. Many investors, especially foreign ones, have had to abandon their projects because of the absence of such facilities as cold chains (to increase shelf life between harvest and sale), and adequate and efficient port handling facilities. For example, the export shed at the airport is so small that all the handling of highly perishable fresh produce is done in the open and at the mercy of the elements.

## **5.6      *Provision of irrigation services***

Apart from Dizengoff, there are no companies selling irrigation equipment and servicing it on a regular basis. Investors usually buy the systems from abroad. The supplier comes down to do the installation and goes back to his country after training some personnel on the farm to operate the system. The absence of dealers in irrigation equipment on the scene makes it difficult, especially for local investors, to peruse their proposed projects and to service systems already installed.

## **5.7      Marketing**

Companies like Jei River Farms, Volta River Estates, Paradise Farms, etc., are making steady progress because they sell on good and reliable markets. These companies are well connected on the market because they:

- Employ high levels of professionalism in their operations;
- Export good quality produce;
- Maintain consistency in supply;
- Are able to deliver on time.

On the other hand commercial farmers especially in the vegetable sub-sector are making very slow progress and in several cases retrogressing because of difficulties encountered in marketing. Firstly, the absence of a cold chain (a series of field heat extractors, refrigerated vans and cold storage facilities) to reduce the rate of spoilage after harvest restricts producers from dealing with the more reliable buyers who normally insist on handling produce through such a system.

Secondly, the serious buyers, e.g., packers for supermarkets, generally are large volume dealers. Individually none of the vegetable producers is able to satisfy such buyers. Unfortunately, however, each company prefers to export on its own. Attempts to have them come together to generate the critical mass required for entry into this type of market have so far not been successful. The commercial vegetable producers are, therefore, reduced to exporting to importers who supply the small street corner shops. Many of these importers are unscrupulous and have very doubtful payment records. The vegetable exporters have lost and continue to lose high amounts of precious earnings through the offer of very low prices, short payment and non-payment by their importers.

## **6.          Conclusion**

The advantages of irrigation are obvious to every farmer and by now larger areas of land should have been under irrigation. It is a combination of the constraints enumerated here which may prevent an entrepreneur from investing in irrigation, and may restrict the expansion of some of the existing facilities. To enhance investments in commercial irrigation the private and public sectors must sit together to address these problems. Jei River Farms, Volta River Estates and others have amply demonstrated that success can be achieved in commercial irrigation in Ghana. The rest of us can follow their example.