

DEVELOPMENT-ORIENTED INTEGRATED CASSAVA PROJECTS

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SUMMARY

The development of specific integrated projects for cassava production and processing requires a clear policy backed with sufficient funding. It also requires commercial activities of a local firm or organization with sufficient entrepreneurial competence. This can often usefully be backed up on a temporary basis by employing the services of public or private consultants with appropriate knowledge and experience. It is suggested that the first processing development can most easily be directed towards the production of stock feeds with the production of human food following as a second stage of development.

RESUME

Le développement de projets spécifiques intégrés pour la production et la transformation du manioc exige une politique bien définie et un financement adéquat. Il faut également la mise en place d'une société locale ayant l'expertise pour organiser efficacement les structures et les activités de commercialisation. Pour commencer, il faut envisager une période transitoire en recourant aux services d'experts compétents du secteur public ou privé. L'entreprise peut se faire en deux phases: la première, facilement réalisable pourrait être orientée vers la production d'aliments de bétail et la seconde vers la production alimentaire destinée à l'homme.

RESUMEN

El desarrollo de proyectos integrales específicos para la producción procesamiento de yuca, requiere una clara política apoyada con fondos suficientes. También requiere de las actividades comerciales de una empresa u organización local suficientemente competente. Esto se obtiene a menudo, sobre una base temporal, con el empleo de los servicios de los consultores públicos o privados con conocimientos apropiados y experiencia. Se sugiere que el primer proceso para el desarrollo puede lograrse más fácilmente si se dirige hacia la producción de alimentos para ganado continuando con la alimentación humana en una segunda etapa de desarrollo.

INTRODUCTION

Cassava (manioc, mandioca, yuca) is a well-known root crop, grown and consumed all over the tropical and subtropical world. Estimated world production is 90,000,000 tons. Its main use in nearly all countries where it is grown is as a staple food, and it is usually cultivated as a subsistence crop. However, its use in industrialized countries, especially in the U.S.A., is well established in the form of processed cassava starch ('tapioca') employed both as food and for industry for innumerable derivatives such as glucose. Recently cassava has found a substantial market in the compounded animal feeds industry in Western Europe. This market reached 1,500,000 tons in 1971. Thailand provides nearly all the cassava traded for animal feed, and this country itself consumes no cassava at all, and until World War II, grew none.

This monopolistic position, coupled with the recent renewal of interest in cassava in scientific and development-aid circles, has generated several inquiries from governments and private organizations in developing countries. Some of these inquiries have led to projects intended to introduce new producers into the promising European animal feeds market. However, each attempt has revealed considerable difficulties at practically every operational level — agricultural marketing, quality, cost of production — as well as the complications of coordinating all the components into a workable enterprise or 'system'. As a result, Thailand still (1973) maintains its dominant position in the markets, and no substantial alternative source of supply has yet been developed.

The challenges presented by the formulation and implementation of new 'integrated cassava projects' several years ago involved organizing applied research, analyzing the economics and developing trading contacts required by such an undertaking. Several projects are now on the verge of becoming realities, so it is possible to outline them here in general terms.

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GENERAL ORIENTATION OF FUTURE CASSAVA PROJECTS

Cassava has three main uses: as human food, as an industrial item, and as animal feed.

Our analysis of past inquiries from many developing countries over a twenty-year period suggests that industrialization of cassava production for purposes of entering international markets will not generally support a project. The main reason is probably the competition from other starches, particularly corn starch in the U.S., which is being recently matched by similar developments in Europe.

Similarly, attempts at industrialization of the traditional human food uses for cassava in developing countries have so far had limited success. For example, neither improved or better-packaged 'gari' in Nigeria, nor projects for cassava-containing bread or pastry in some South American countries, have yet produced a substantial commercial cassava project. However, current research now holds promise in these directions.

Finally, while cassava has sometimes been fed to animals (hogs and cattle particularly) by farmers in many developing countries, the intensive and recent importation and use of it in Western Europe has drawn attention to the obvious possibility of applying this new technology to the animal industries in developing countries themselves. Such development could go far in solving the meat production and dairy production problems, hence meeting the protein needs, of many developing countries. This use of a locally produced cassava feed, together with the use of sugarcane by-products should have an important effect on the structuring of future cattle projects.

OUTLINE OF POSSIBILITIES FOR COMPREHENSIVE CASSAVA PROJECTS

A careful analysis of the potential and of the limitations of cassava operations have led us to the conclusion that a development-oriented and business-oriented cassava project should be constructed as follows:

1. At the start there is need for solidly organized production of a steady supply of roots of consistent quality and in sufficient quantity to initiate, within one year or two at the most, the export of a reasonable quantity of semi-processed products (i.e. chips or pellets) to Europe. The problems in achieving this basic foundation are numerous, but with proper coordination of applied research, continuing experimentation, management, production, processing, transportation, handling, and marketing, solutions should be found, and at a cost of production competitive with Thailand.
2. Simultaneously, the project should include a development component (based on applied research, experimentation and gradual implementation) towards the feeding of local livestock for meat and dairy production.
3. Also simultaneously, or shortly thereafter, the project should revive or initiate attempts to apply new technologies aimed at the production and commercialization of improved human food products through protein enrichment and flour substitution. Bread, pastry, crackers, sausage, meat products, macaroni, noodles, beer, fermentation-enriched concentrates may all be developed on a basis of cassava starch.
4. The starch uses for industry involve much more limited quantities and thus should be developed for local industry in the producing country (textile, wood, paper, etc.) and only as a secondary objective for export to surrounding or even more distant countries.

CONCLUSIONS AND RECOMMENDATIONS

Much applied research has now been done; the information is readily available, and study of failed projects and of their difficulties can provide guides to the pitfalls to be avoided.

Studying such projects leads us to the conclusion that a successful cassava project in almost every developing country also requires:

1. A clear policy by each government with much higher priority and greater means that allotted so far towards agricultural development projects.
2. Competent but concentrated local entrepreneurship, if necessary supported by fairly small specialized consulting teams, able to provide guidelines, on an essentially temporary basis. Consultants may be from public or private institution.