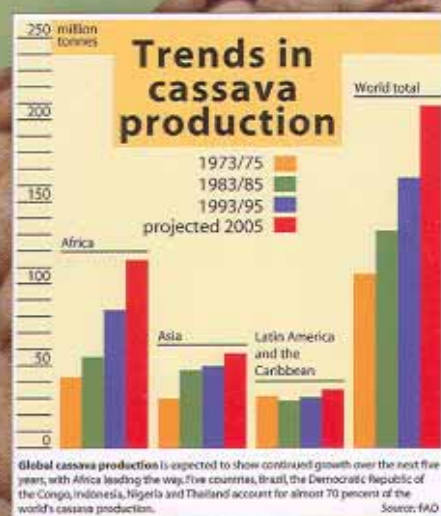


# The global cassava development strategy and implementation plan

Volume 1



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INTERNATIONAL COOPERATION CENTRE ON AGRARIAN RESEARCH FOR DEVELOPMENT



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**PROCEEDINGS OF THE VALIDATION FORUM  
ON THE GLOBAL CASSAVA DEVELOPMENT STRATEGY**

Rome, 26-28 April 2000

# **The global cassava development strategy and implementation plan**

**Volume 1**

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## FOREWORD

Cassava is one of the most strategic crops throughout the tropical world. It is an essential part of the diet of more than half a billion people and it provides livelihood for millions of farmers, processors and traders around the world. Cassava, despite its importance as a staple crop and industrial raw material, and its contribution in fighting hunger and poverty in developing countries, has often been neglected in agricultural development policies.

Given the projected increase in supply and demand, the importance of cassava is likely to continue for the foreseeable future. To promote cassava further and increase its production and utilization in Africa, Asia, Latin America and the Caribbean in the future, FAO and IFAD in collaboration with CIAT, CIRAD, IITA and NRI, recognized the need to formulate an overall strategic plan for cassava development. Thanks to the generous financial support of IFAD, World Bank, Swiss Development Cooperation and IDRC, a number of country case studies, regional reviews and cross-cutting thematic papers were prepared to provide the basis for the Global Cassava Development Strategy document.

The International Validation Forum, jointly organized by FAO and IFAD, at FAO Headquarters in Rome, Italy, from 26 to 28 April 2000, officially endorsed the strategy document and adopted a plan of follow up actions for the Global Cassava Development Strategy. FAO, in its status as an international organization supported by its Member Countries, will play a key role in facilitating the implementation of the strategy.

The Plant Production and Protection Division of FAO has compiled the documents prepared during the process of building the strategy and the papers presented at the Forum. The Division is now pleased to publish the Proceedings of the Validation Forum in order to disseminate the information to stakeholders, cassava producers and their organizations, governments and policy makers, donors, technical and research institutions and their networks, NGOs and their networks, the private sector as well as to scholars, experts and individuals in the developing world.

We trust that these Proceedings will contribute to increasing the production of cassava globally, and will help to overcome the neglect to which this crop has long been subjected.

Mahmud Duwayri  
Director  
Plant Production and Protection Division  
Food and Agriculture Organization of the United Nations

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## ACRONYMS AND ABBREVIATIONS

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ACRAC	Asia Cassava Research Advisory Committee
ADB	Asian Development Bank
ASEAN	Association of Southeast-Asian Nations
AROs	Agricultural Research Organizations
ASARECA	The Association for Strengthening Agricultural Research in Eastern and Central Africa
CENARGEN	National Research Center for Genetic Resources and Biotechnology
CEWARRNET	Central and West Africa Root Crops Research Network
CFC	Common Fund for Commodities
CIAT	International Center for Tropical Agriculture
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement
CORAF	West African Conference of Research Managers
EMBRAPA	Brazilian Agricultural Research Corporation
GEF	Global Environment Fund
GTZ	German Agency for Technical Cooperation
IARC	International Agricultural Research Centres
IDRC	Canadian International Development Research Centre
IFAD	International Fund for Agriculture Development
IFS	International Foundation for Science
IGG	Inter-Governmental Group
IITA	International Institute of Tropical Agriculture
ILTAB	International Laboratory for Tropical Biotechnology
IPGRI	International Plant Genetic Resources Institute
ISTRC	International Society for Tropical Root Crops
ICRTRC	International Committee on Root and Tuber Crops Research
NARS	National Agricultural Research Services
NGOs	Non-governmental organizations
NRI	Natural Resources Institute
OAS	Organization of American States
OAU	Organization of African Unity
SACCAR	Southern African Center for Cooperation in Agricultural Research
SDC	Swiss Development Cooperation
USAID	The US Agency for International Development

## BACKGROUND NOTE

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The development of the Global Cassava Development Strategy (GCDS) and associated documents evolved from a brainstorming meeting convened by the International Fund for Agricultural Development (IFAD) in 1996 in Rome, Italy. Recognizing the importance of cassava as staple food and a source of income for hundred of millions of poor people in marginal areas in many parts of Africa, Asia and, Latin America and the Caribbean, the meeting noted the urgent need to formulate an overall strategic plan for cassava development.

The strategy consists in a systematic approach to identifying opportunities and constraints at each stage of the commodity development cycle from production to consumption. It is also considered as a framework for technical cooperation in research and technology transfer and for future debates on global issues affecting cassava.

It is recognized that a GCDS requires a coalition of stakeholders including cassava producers and their organizations, governments and policy-makers, donors, technical and research institutions and their networks, NGOs and their networks, and the private sector.

The development of the strategy was spearheaded by IFAD and the Food and Agriculture Organization of the United Nations (FAO) in collaboration with the International Institute of Tropical Agriculture (IITA), the International Centre for Tropical Agriculture (CIAT), the Natural Resources Institute (NRI) and the "Centre de coopération internationale en recherche agronomique pour le développement" (CIRAD). The strategy is based upon a number of country case studies (for Benin, Brazil, Colombia, Ghana, Nigeria, United Republic of Tanzania, Thailand, Uganda and Viet Nam), regional reviews (for Africa, Asia and Latin America) and cross-cutting thematic papers (on cassava markets and environmental issues of cassava production and processing) that were funded by IFAD, World Bank, Swiss Development Cooperation and the International Development Research Centre (IDRC). In a review workshop held in 1997 in Rome, these studies were reviewed and a plan for completion of the strategy was developed. The plans covered the drafting of the strategy document by international experts, D. Plucknett, T.P. Phillips and R.B. Kagbo in 1998.

The strategy presents a vision that cassava will spur rural industrial development and raise incomes for producers, processors and traders and it will contribute to the food security status of its producing and consuming households. The essence of the GCDS is to use a demand-driven approach to promote and develop cassava-based industries with the assistance of a coalition of groups and individuals interested in developing the cassava industry.

Following the preparation of the draft document which was distributed to regional and international bodies, and individuals for comments and modifications, a series of regional

consultation meetings were organized to gather ideas and suggestions to strengthen the strategy and agree on the approach proposed in the draft document. The regional consultations also provided an opportunity to ascertain the role and contribution of cassava to food security and poverty alleviation and the opportunities for cassava development. The consultation meetings for specific regions and groups were held as follows:

- ✧ Eastern and Southern Africa: Kampala, Uganda, March 1998
- ✧ Latin America and the Caribbean: Cali, Colombia, April 1998
- ✧ African researchers during the Symposium of the International Society for Tropical Root Crops – Africa Branch: Cotonou, Benin, October 1998
- ✧ Asia: Bangkok, Thailand, November 1998
- ✧ West and Central Africa: Accra, Ghana, June 1999

Further to the West and Central Africa consultation meeting, a Progress Review meeting was also organized in Accra in June 1999 to review progress made in the formulation of the GCDS and prepare a course of action for the Validation Forum.

The GCDS Validation Forum was jointly organized by FAO and IFAD under the auspices of FAO headquarters in Rome. There were 78 participants (45 invitees, 6 from IFAD and 27 from FAO) who attended the Forum, representing the public and private sectors, NGOs, Farmers' Organizations, IARCs (CIAT, IITA, IPGRI) and their networks (ACRAC, CEWARRNET, CLAYUCA, CEWARRNET, ISTRC-AB), AROs (CIRAD, NRI and the Universities of Hohenheim and Bath), financing and donors agencies (ADB, CFC, IDRC, IFAD, IFS, USAID), and selected national institutions (mainly those which contributed with Country Case Studies for the Strategy). Participants were from 22 countries.

The forum included presentations of: the background to the GCDS, Cassava Regional Reviews, Thematic Review, Cassava Medium-Term Outlook, the GCDS document, a Proposal of an Action Plan for the Implementation of the Strategy, as well as the Global Programmes for Commodity Chains. Three Working Groups were formed to discuss Coordination; Information Management; and Linkages and Integration. The plenary presentations by Working Groups addressed the problems raised in each of the groups and identified main activities for the implementation of the strategy. After discussion, a Drafting Committee was set up to prepare conclusions and recommendations for the forum. In the final plenary session, conclusions and recommendations were presented. During the discussion, participants provided valuable inputs for consideration in the implementation plan proposal. A representative of each of the principal stakeholders made a statement on their perception with regard to the GCDS and its implementation plan. Finally, participants were asked to confirm if they agreed to endorse the strategy and adopt the outline implementation plan.

The GCDS was endorsed with the following key points highlighted:



- ✧ It should be demand driven and/or market oriented and take advantage of market opportunities for traditional and new products;
- ✧ It should follow an integrated approach involving simultaneously production, processing and marketing;
- ✧ It should have catalysts and champions to facilitate cassava development;
- ✧ It needs to be applicable to a wide range of stakeholders and implemented at various paces and levels starting from national, through regional to global;
- ✧ It should address issues of sustainability, gender and equity, and potential environment impact;
- ✧ It should address food security concerns for disaster mitigation and recovery situations.

The Implementation Plan adopted during the forum draws on the principles outlined in the strategy document and takes into consideration the priorities established by representatives of the public and private sectors during the various consultation meetings. It reflects the discussions and conclusions reached by the participants in the Forum.

It was agreed that FAO, in its condition as an international organization supported by a large number of member Governments, has a key facilitation role to play in the implementation of the Strategy. In the first place, FAO will publish the report of the Validation Forum using funds made available by IFAD. FAO will also be responsible for the maintenance, updating and enhancement of the GCDS Web site, which is already accessible through FAO's Web page. It was acknowledged, however, that commitments were required from other organizations to assist in promoting and co-ordinating the implementation of the Strategy. The Implementation Plan provides a basic mechanism to facilitate the design of cassava development activities, spanning around three main areas, namely: coordination; information and promotion; and linkages and integration. The undertaking of activities in the three areas will need commitments from a range of institutions and groups of stakeholders. The presence of catalysts and champions to help and promote the implementation of activities is crucial for the successful implementation of the Strategy. Actions required at the global, regional and national level are listed in the implementation plan.

# THE GLOBAL CASSAVA STRATEGY

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## **THE GLOBAL CASSAVA STRATEGY FOR CASSAVA: TRANSFORMING A TRADITIONAL TROPICAL ROOT CROP**

*Spurring Rural Industrial Development and Raising Incomes for the Rural Poor*

Prepared by

- Donald L. Plucknett, Agricultural Research and Development International
- Truman P. Phillips, dTp Studies Inc.
- Robert B. Kagbo, Agricultural Research and Development International

## **EXECUTIVE SUMMARY**

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The vision for cassava is that cassava will spur rural industrial development and raise incomes for producers, processors and traders. Cassava will contribute to the food security status of its producing and consuming households.

A *raison d'être* for developing a global cassava marketing strategy is the belief that it will contribute to the economic development of processing communities and well-being of numerous disadvantaged individuals in the world. It is suggested that a necessary condition for the implementation of this strategy is the existence of a growing demand for cassava.

To achieve this vision the Global Cassava Strategy is proposed. The essence of the Global Cassava Strategy is to use a demand-driven approach to promote and develop cassava-based industries with the assistance of a coalition of groups and individuals interested in developing the cassava industry.

The strategy consists of identifying, in a systematic manner, the opportunities and constraints of cassava at each stage of the commodity development cycle. This can be done by groups and individuals interested in developing the cassava industry; producers, processors and consumers of cassava, as well as associated national, international and non-governmental organizations. Concepts of business development and management as well as international economic cooperation are important tools in implementing the strategy. Scientific support is also essential to help overcome important problems within the production-processing-marketing continuum. Adaptive research is essential to ensure that existing and evolving knowledge is harnessed in an appropriate and useful fashion. The overall aim is to achieve demand-driven technical change and economic growth.

The Global Cassava Strategy suggests the utilization of "industry analysis". Industry analysis consists of identifying, in a systematic manner, the opportunities and constraints at each stage of the supply chain. Industry analysis involves stakeholders in a participatory effort to identify strengths, weaknesses and opportunities. Industry analysis is a demand-driven approach to technical change through:

- i) Explicitly considering stakeholders as equal partners in determining the needs and future plans for a dynamic cassava industry;
- ii) Building a practical, shared vision for cassava development;
- iii) Helping make action plans for the industry, including the who, what, why, and how, plus the question, with whose money?
- iv) Building better linkages with private sector organizations;
- v) Better links with and among public-sector institutions;
- vi) Co-stewardship of research and service outputs with users;
- vii) Rapid introduction of high-impact technologies through public and private sector partnerships.

The initiation of this Strategy will require catalysts capable of identifying marketing opportunities, and bringing these to the attention of stakeholders, and champions, capable of providing support and resources for the growth and development of cassava markets. Even if the stakeholders agree that there is a growth market for cassava, there may still be need for research and development, provision of infrastructure and investments, and changes in policies to grasp the new opportunity.

A necessary and perhaps first step in the development of a market-driven global cassava strategy is the identification of markets that are growing or could potentially grow. A second step is the provision of a consistent supply of a relatively uniform product. A third step, related to step two, is to provide the market with a competitively priced product that meets the consumers' requirements. A fourth step is to secure the cooperation of those associated with the market opportunity.

The development path for cassava will be product-, location- and time-specific. Nevertheless, it would appear that if the market growth potential exists because of a structural change in the economy (e.g. decreasing number of farmers and increasing number of urban consumers of cassava products, resulting in market growth) one would expect that NGOs and national governments would be in the best position to act as champions and catalysts. If, on the other hand, the market growth exists because cassava is price competitive then both national and international agencies may act as champions and catalysts. Finally, in the case where cassava has a unique advantage the catalyst or champion may not be a national or international agency, but instead be an industry or corporation that has proprietary interest in cassava.

The global strategy should be seen as comprising both bottom-up and top-down approaches. The global strategy is an amalgamation of national, regional and continental strategies and plans, augmented by global efforts to identify and stimulate markets. The national efforts will be the action-sites for implementing the global strategy. The global effort assists with financing, changing policies that constrain markets.

National strategies should evolve from a process of industry analysis. In this process, the relevance of roots and tubers, especially cassava, as a possible entry point in developing a national strategy should be explored. In particular, special reference should be given to the role of the cassava production-processing-marketing continuum in specific ecological zones or socio-geographic communities, from the viewpoint of food security or income generation and economic diversification.

Regional strategies should be developed where farming systems, environmental conditions, and processing and utilization of cassava are similar. Regional strategies should be supportive of and supported by regional entities such as ASARECA in East and Central Africa, SACCAR in Southern Africa, or CORAF in West Africa that are actively involved in

agricultural development of root crops. These regional entities could act as champions or catalysts for cassava.

The continental strategy expands on national and regional strategies. The continental strategy highlights the needs and support that transcend national and regional concerns.

The Global Strategy seeks global support to help implement the strategy. Development banks and institutions such as the World Bank, Asian Development Bank, Inter-american Development Bank and African Development Bank may play a vital role. The Global Strategy provides assistance to cassava-growing nations that are developing and supporting national strategies. The Global Strategy should assist with the development of a global forum for the pursuit of cassava market opportunities, identification of source of capital, and promotion of a strong base of research support for global genetic resource and enhancement studies, including biotechnology.

## **I. INTRODUCTION**

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The twentieth century saw the most dramatic agricultural transformation in human history. Science-based agriculture brought about rapid changes on the farm and sped the transformation from subsistence agriculture to a more productive and profitable modern agriculture. As agricultural production improved and farmers succeeded, some began to specialize in certain crops or products. This resulted in the growth of farmer-led private enterprises and the building of non-farm private sectors in rural areas. As science-based agriculture moved ahead, private sector involvement emerged in off-farm food processing, mercantile operations including the supply of inputs and other materials, transportation, marketing and other services. Sustained economic growth, in all but a few countries, was preceded by success in agriculture. Agriculture has as much potential as industrialization to contribute to economic growth and development. Technological change in agriculture however requires a constant flow of new technologies to farmers and a wide range of options.

This strategy document addresses two questions: Can cassava, a traditional subsistence food crop, become the raw material base for an array of processed products and industrial development that will effectively increase the demand for cassava and thereby contribute to agricultural transformation and economic growth in developing countries? If so, how?

These questions are an outgrowth of a four-year effort led by IFAD to:

- i) Determine the status of the cassava industry around the world;
- ii) Understand the potentials and limitations of cassava as a food and industrial crop;
- iii) Draw up plans to ensure that cassava can and will play an important role in development and economic growth in developing countries.

Thailand provides an example of the contributions of an expanding cassava industry to economic growth and the well-being of those associated with the industry. A country with no history of producing cassava as a human staple food, Thailand in a few short years in the 1960s and 1970s developed a dynamic cassava export industry shipping cassava-based animal feeds to the European Community.

What is wanted is a practical global vision for cassava that can be translated into plans and actions for nations, regions and continents.

### **The vision**

Cassava provides the livelihood of up to 500 million farmers and countless processors and traders around the world. It is the basic staple for hundreds of millions of people in the tropical and subtropical belt, as well as being a feedstock for numerous industrial applications, including food, feed and starch. Cassava production is closely allied with, but not the cause of, poorer farm households. This relationship exists because poorer households are marginalized and often live in marginalized areas – the same areas where cassava performs well.

Cassava is a source of food security, not only because it can be grown on less productive land, but because it is a source of income for producers and generally a low cost source of food. These relationships suggest that the development of market opportunities for cassava can contribute substantially to poverty alleviation, especially for resource-constrained households, and can increase household food security.

Thus our vision is:

*Cassava will spur rural industrial development and raise incomes for producers, processors and traders. Cassava will contribute to the food security status of its producing and consuming households.*

### **The strategy**

To achieve this vision the Global Cassava Strategy is proposed. The essence of the Global Cassava Strategy is *to use a demand-driven approach to promote and develop cassava-based industries with the assistance of a coalition of groups and individuals interested in developing the cassava industry.*

The strategy consists of identifying, in a systematic manner, the opportunities and constraints of cassava at each stage of the commodity development cycle. This can be done by groups and individuals interested in developing the cassava industry; producers, processors and consumers of cassava, as well as associated national, international and non-governmental organizations. Concepts of business development and management as well as international economic cooperation are important tools in implementing the strategy. Scientific support is also essential to help overcome important problems within the production-processing-

marketing continuum. Adaptive research is essential to ensure that existing and evolving knowledge is harnessed in an appropriate and useful fashion. The overall aim is to achieve demand-driven technical change and economic growth.

### **Guiding principles**

The global cassava development strategy cannot be "business as usual" in approach. Instead it must:

- ✧ Be based on a practical, long-term vision, have an overall goal of agricultural transformation using cassava as its commodity and product base. [Agricultural transformation is the process of moving from subsistence agriculture to a modernized system based on improved techniques and information, specialization, market transactions, and greater profitability for producers and related industries];
- ✧ Build on past and present experience, knowledge and capability;
- ✧ Be based on careful and insightful "industry analysis" of the production/processing/marketing system that is demand- and market-driven and includes both private and public sectors;
- ✧ Place emphasis on production/processing/marketing "priority products" [Priority products are farm and off-farm raw, intermediate, and consumer products that have the greatest potential to contribute to agricultural transformation and economic growth];
- ✧ Place emphasis on adding value to cassava products to achieve greater returns to both producers and processors;
- ✧ Promote cassava and cassava-based products;
- ✧ Recognize the central role of the processing of fresh roots to produce unique products with high market demand, including secondary products derived from primary products such as starch, chips and pellets; likewise, to recognize the central role of processing at the interface between supply-side and demand-side interventions;
- ✧ Rely on dynamic and innovative private/public partnerships between producers, processors, marketing people, financiers, and government leaders;
- ✧ Recognize the need for actions relating to both demand for, and supply of, cassava products;
- ✧ Be science-based;
- ✧ Be both knowledge and management-intensive;
- ✧ Improve institutional capacity in R&D support, processing, financing, and marketing;
- ✧ Realize there is no free ride to a productive, profitable cassava industry. To achieve this will require commitment of funds, development of human resources, and building of capacity, especially at national level, in research and development, management, processing excellence and marketing skills and ingenuity, including innovative and willing public support.

### **Export of Cassava-based Feeds from Thailand to Europe:**

Thailand's success in marketing cassava chips and pellets in Europe for use as livestock feeds provides a model for transforming cassava through an industry-wide approach. Thailand during about a 25-year period through effective public/private partnerships and wise government policies developed a dynamic cassava industry mostly from scratch.

Historically, Thailand's agricultural economy has been driven by exports. Until World War II rice exports led the way. After the Second world war, upland development in the north and northeast brought agricultural diversification during which cassava, kenaf, maize and sugar cane were added to the national crop list. About the same time, modern cassava starch processing was introduced in the Chonburi region in the east, and soon Thai starch exports supplanted those of Indonesia and Malaysia.

Thailand's early success with cassava starch led to a problem that became an opportunity. Wastes from starch manufacture, which could have been viewed as a problem, became the basis for future market expansion. In 1956 an enterprising West German importer successfully introduced cassava starch wastes as a substitute for expensive German grains. During the post-war period, high support prices for grains caused the European animal feed industry to seek cheaper carbohydrates. Cassava from Thailand and Indonesia filled the need, and cassava meal exports doubled from 1955 to 1960.

From about 1960 a new industry based on cassava meal began to grow, with Thailand as its principal supplier. In the early 1960s, as a result of artificially set floors and ceilings, the implementation of Europe's Common Agricultural Policy (CAP) insulated European feed grain prices from world market prices. In its tariff structure the EU created a window for import of cassava meal and chips because these were treated differently from grains. Thailand's public and private sector responded quickly to the new market opportunity by supporting a vertically integrated system of cassava production, processing, and marketing, based on tens of thousands of small producers. Small-scale production and processing (chipping and drying) were integrated with village-level coordination of supply to middlemen who delivered the chips to ports for shipment to Europe.

In the late 1960s, in order to reduce shipping volume and to deal with European concerns about dust pollution, Thailand shifted its product lines from meal and chips to pellets and chips by changing its processing systems. Chipping and drying are done on-farm or close to the farm; starch processing is done mostly in large factories. Processing into pellets depends on middlemen who consolidate chips from thousands of small farms into processing and marketing channels. From near zero in 1960, Thailand's chip and pellet exports grew to 8 million tonnes annually in 1992-94.

Because of budget strains caused by its CAP grain policy, the EU sought ways to reduce cassava imports by seeking voluntary restrictions from Thailand. A 1986 agreement specified a maximum volume of 21 million tonnes for the period 1986-89. The EU set a quota of 5.25 million tonnes for 1995-96, but hinted possible future reductions. Within the quota, cassava enters the EU at a preferential 6% tariff, but beyond the quota a 30% tariff applies. Even at preferential rates, Thailand has not met its quota since 1994, owing to competition with grains. By 1995, of the 3.3 million tonnes of chips and pellets exported from Thailand, 93% went to Europe.

Gradual withdrawal of cassava's special treatment in the EU has caused the industry to diversify both products and markets. New markets in Asia were sought aggressively. Japan, Republic of Korea and Taiwan province of China began to import pellets for animal feed; however, competition with grains has cut into these markets.

To reduce dependence on the EU feed market, Thailand is working hard to reduce costs and keep its products competitive, seek new markets, develop internal feed markets, and diversify into starch and starch-based products. New opportunities for cassava, both within and outside Thailand, depend on increasing efficiency in production, processing and marketing. Today Thailand is leading the way in Asia in cassava starch manufacture.

Process, product and internal market development are mostly handled by the private sector. The Government has given strong help in export development. Most research has come from public sector institutions. Important institutions include: Kasetsart University, the Department of Agriculture [Rayong Research Institute] and the five Thai trade associations who work mostly in industry promotion and trade.

In the words of the authors of the excellent report, *Cassava in Asia*, "Thailand has ... put cassava on the map, in Asia and the industrial world" (Hershey et al. 1997b). Other key references are Ratanawaraha, Senanarong, and Surivaphan 1997; Titaniwatanakun 1997.



## II. HOW WE GOT HERE

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The International Fund for Agricultural Development (IFAD) has been the initiating institution in this strategy planning exercise. At a brainstorming meeting in May 1996 the need for a global strategy was discussed; following that meeting a Task Force to develop the strategy was appointed.

In February 1997, the Intergovernmental Group on Grains urged FAO to cooperate closely with the IFAD global cassava strategy task force. At the same meeting the Group on Grains agreed to extend its Terms of Reference to include roots, tubers and pulses, with the following modification statement:

*"The Group shall include in its field of competence roots, tubers and pulses, exclusively for securing funding for commodity development purposes from the Common Fund for Commodities and, possibly, other financing agencies." The Group also endorsed five new project ideas, including three for cassava: Integrated Research and Development Project for the Development and Value-adding of Cassava Products in China and South Asia Region; Cassava Market Information and Promotion Service; and Expanding Cassava Utilization for Food, Feed and Industrial Applications in Africa. The Group also endorsed the commodity development strategy for cassava as an essential prerequisite for the Fund's giving consideration to projects for any commodity. (Working Group on International Agricultural Research 1997.)*

Major impetus was given to the effort at the IFAD-sponsored Global Cassava Development Strategy Progress Review Workshop in Rome. At this 10-11 June, 1997 meeting, the following topics were discussed: formulation of the global strategy, a prospective implementation plan, design and scope of relevant cassava-related R&D projects, and confirmation of the relevance of roots and tubers, especially cassava, as a possible entry point in developing a country or regional strategy, with special reference to specific ecological zones or socio-geographic communities, either from the viewpoint of food security or income generation and economic diversification. The comprehensive global, regional and national reports presented at the Rome Workshop set the context in which the Global Cassava Strategy should be formed.

### **As the Asian report notes:**

*...cassava is emerging as a fully commercial crop entering diversified markets. This status defines an evolving and dynamic role in development for the region. Roots are converted into an array of products – human food as fresh or processed roots, starch and flour for food and industry, and animal feed... In this context, cassava serves as an ideal focus to achieve several development goals. Improving this crop is a way to direct various benefits toward the poorest of rural populations. (Hershey et al., 1997b)*

## **The Latin-American and Caribbean report notes:**

*The cassava sector is at a crossroad in the Americas. Traditional processing and markets continue to dominate in the region. Traditional processing and markets continue to dominate in the region. These are best suited to largely rural societies... But three quarters of Latin Americans now live in cities.... the crop retains the basic features that reinforce its role as an appropriate vehicle for development: a crop of small, resource-poor farmers; adaptation to marginal environments where other crops are far more risky; high potential energy production per unit land area; high flexibility in management; and ability to enter diverse markets. With focused and sustained research and development support, this crop can make substantial contributions to the broad goals of food security, poverty alleviation, equity, and protection of the environment. (Hershey et al., 1997a)*

The African report reconfirmed the importance of cassava in traditional markets, as well as emerging markets that use processed cassava. The report points out:

*Industrialists and entrepreneurs often shy away from using cassava in their applications because of the absence of a local example to follow and the uncertainty of success. Therefore, product development research needs to be strongly promoted and the private sector should be encouraged to participate. Issues that need to be addressed include raw material import substitution; promotion of a positive image for cassava development of products for existing and new markets; identification of the functional characteristics of cassava genotypes in relation to various end uses; utilization of cassava plant parts (e.g. leaves, peel, etc.) for livestock feeding; suitability of cassava leaves as vegetable; and determination of foliage yield and digestibility for human and animal nutrition. The impact of pathogens and saprophytes on the quality of stored cassava products, including contamination with mycotoxins, should be investigated. (Spenser and Associates, 1997)*

Finally FAO provided an overview of the trends in cassava production and utilization. FAO notes that:

*By 2005, world cassava production is projected to increase to 209 million tonnes (fresh weight) or 2.2% annually as in the past, reflecting both yield improvements and area expansion.... World utilization is projected to increase by 2.3% annually to 209 million tonnes. 60% of the total demand is for food, the remainder for feed and other uses. By 2005, global cassava trade is projected to increase by 1.6% to 5.8 million tonnes (dry weight from 4.8 in 1993-95, reflecting moderate growth in import demand for cassava feed and other novel cassava food and non-food products. However, cassava for feed is projected to continue to account for over three-quarters of the world cassava trade and flours and starches for food and industrial uses for the remainder. (FAO, 1999)*

The individual country studies highlighted the potential benefits of developing new market opportunities as well as the difficulties that may be encountered when trying to develop cassava-based products with value-added processing, packaging and marketing.

Actions proposed by the Workshop were to engage a team of consultants to prepare this draft strategy; to have stakeholders review this document at regional meetings; and to present and discuss the revised Strategy at an International Forum.

Stakeholder meetings were held in Africa, Asia, Europe and Latin America. The dates for presentations and consultative workshops were:

<b>Date</b>	<b>Location</b>	<b>Sponsors</b>
26 March 1998	FAO, Rome	FAO, IFAD
27 March 1998	IFAD, Rome	IFAD
17-19 March 1998	Brazil	National Research Center for Genetic Resources and Biotechnology (CENARGEN), Brazilian Agricultural Research Corporation (EMBRAPA)
1 April 1998	CIAT, Colombia	CIAT, IFAD
15-19 June 1998	Mukono, Uganda	Common Fund for Commodities (CFC), The Common Market for Eastern and Southern Africa (COMESA), FAO, IFAD
11-17 October 1998	Cotonou, Benin	International Society of Tropical Root Crops – African Branch
23-25 November 1998	Bangkok, Thailand	IFAD, CIAT
1-3 June 1999	Accra, Ghana	FAO, IFAD, IITA

### **III. CASSAVA AND ITS PLACE IN THE WORLD**

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Cassava (*Manihot esculenta Crantz*) is a native of Brazil and during the sixteenth and seventeenth centuries it was dispersed widely by the Portuguese in tropical and subtropical areas of Africa, Asia and the Caribbean. It soon became a staple food in many of these places because of its tolerance to drought, poor soil conditions and generally difficult crop environments.

Cassava is produced mostly by smallholders on marginal or submarginal lands of the humid and subhumid tropics. Such smallholder agricultural systems as well as other aspects of its production and use often create problems, including: unreliability of supply, uneven quality of products, low producer prices, and an often costly marketing structure. The smallholder production system also implies that producers cannot bear much of the risk associated with development of new products and markets. Thus the challenge is to create a strategy that affects production, processing and marketing in such a way that it provides an array of high quality products at reasonable prices for the consumer, while still returning a good profit for the producers without requiring them to assume the largest part of the development risk.

#### **Strengths of cassava**

Cassava can grow and produce dependable yields in places where cereals and other crops will not grow or produce well. It can tolerate drought and can be grown on soils with low nutrient capacity, but responds well to irrigation or higher rainfall conditions, and to use of fertilizers. Cassava is highly flexible in its management requirements, and has the potential of high-energy production per unit area of land. Once thought to be resistant to pests and diseases, the

crop can be improved genetically to increase its resistance to damage from serious pests and diseases. Cassava yields can be quite high, as high as 25 to 40 t/ha, although national yields are often well below these levels. World average is about 10 t/ha.

The crop has long been used as a famine reserve and food security crop. Because cassava has no definite maturation point, harvest may be delayed until market, processing or other conditions are more favourable; this flexibility means cassava may be field stored for several months or more.

Although it was long considered a smallholder subsistence crop, cassava can be grown in large plantations or in more favourable conditions to produce raw materials for industrial processing. Cassava starch has some unique characteristics that favour its use in specialized market niches. In general, cassava has an ability to enter diverse markets.

### **Special problems or weaknesses of cassava**

As a crop of resource-poor farmers and a food security crop, cassava was generally neglected by researchers. Until three decades ago the global knowledge base on cassava was meagre. Only through the past three decades has an understanding of the crop been greatly advanced, however, the knowledge base is still much smaller than that of most cereal crops. Gaps in our knowledge contribute to a number of the problems or weaknesses noted below.

Cassava is vegetatively propagated, using stem cuttings taken at harvest of the previous crop. Stem cuttings are bulky, do not store well and are costly to cut and handle. Vegetative reproduction also means multiplication rates for new improved varieties are slow, retarding their adoption. There is need for a system to use true seed as a means of increasing the production of planting material for distribution. On larger farms the use of true seed is a way to cut costs of planting material.

As a root crop, cassava requires considerable labour to harvest. Its roots are bulky and highly perishable and therefore must be processed into storable form soon after harvest. Cassava is labour intensive and costs of production can be quite high, compared to other carbohydrate sources.

Cassava is often relegated to marginal lands due to competition with higher-value and more respected crops. This trend is likely to continue as such crops are further improved to adapt them to marginal conditions. Hence, with time, cassava often winds up in hill-lands, lands with low soil fertility, or lands susceptible to periodic or seasonal drought or flooding. Cassava-producing areas typically lack infrastructure such as roads, communications and input supply systems.

In general, cassava is not well regarded as a food, and in fact there is often a considerable stigma against it. The stigma is partly owing to the cyanogenic glucosides, compounds that

can be toxic unless removed or detoxified by food preparation processes. "Sweet" varieties those with low cyanogenic glucoside levels that can be eaten raw or boiled like potatoes are often susceptible to attack by pests.

Processed cassava products must compete in markets with grain products, so lowering costs of production is essential to its survival as an industrial crop. Also there tends to be less research and development devoted to developing and improving cassava-based products than there is for the competing grain-based products. This lack of research and development contributes to variable production and processing methods, and cassava products that often are of poor or uneven quality.

### **The past 40 years for cassava**

Regional consumption of cassava has changed since 1961 as indicated in Figure 1.<sup>1</sup> Human food is its dominant use market in Africa and Asia, and the second most important market in Latin America. During the nearly 35-year period depicted in Figure 1, cassava for food has doubled in Africa and increased by 70 and 50% in Asia and Latin America, respectively.

The other growth area has been its use as an animal feed, and there the greatest increases have been in Europe, Latin America and Asia. What appears troubling is the consistently high levels of cassava waste observed in Africa, Asia and Latin America. Latin America waste exceeds the amount of cassava used for food consumption.<sup>2</sup> Another interesting observation is the growth in other usage in Asia, and what is not shown in the figure is the North American growth in other usage, which in 1995 exceeded that of Europe. Other uses include the use of cassava for the production of starch, glues and alcohol.

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<sup>1</sup> Excluded from this figure are all processing amounts and North America and Oceania consumption levels because they all are generally of much smaller magnitude than those shown in the figure.

<sup>2</sup> Waste is defined as "lost through waste at all stages between the level at which production is recorded and the household, i.e. waste in processing, storage and transportation" (FAO, 1999). However, in the case of cassava, poor data recording and varying extraction/conversion rates may lead to inaccurate recording of the amount of waste. A comprehensive effort is needed to ensure the accuracy of the waste figures.

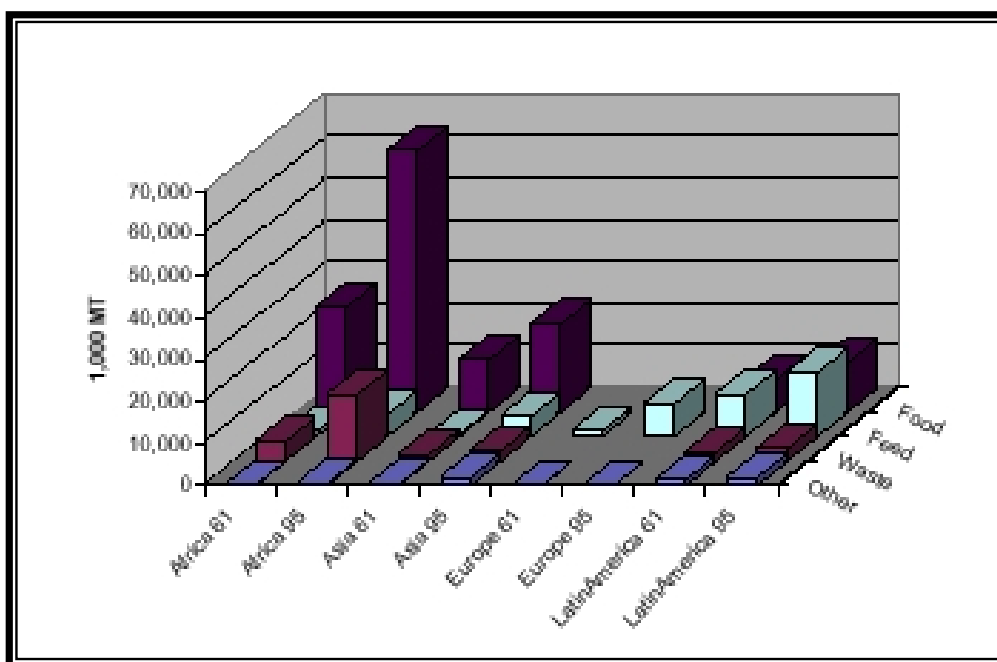


Figure 1. Regional consumption of cassava 1961 and 1995 (tonnes) (FAO, 1999).

Hidden in Figure 1 is the fact that in 1961, with the exception of some Latin American countries, more than 80% of cassava was consumed in the country of production. Outside cassava-producing countries, cassava was primarily known as tapioca.

With the advent of the European Economic Community and its common agricultural policy cassava became a traded commodity that found its way into the European animal feed market. The benefit of cassava was that it was a non-levied energy source that could be mixed with soybeans and other high protein foodstuff. In the 1960s and early 1970s European traders encouraged a number of cassava-producing countries to produce for the EEC. From as early as 1961 Thailand was the leading supplier of cassava to Europe. By 1972 Thailand was the major source of increases in world supply, while Indonesia remained a distant second (Phillips, 1974).

Table 1. Regional cassava imports (tonnes).

Region	1961	1970	1980	1990	1995
Africa	75	1 845	3 975	10 760	18 926
Asia	50 334	257 283	428 877	4 891 944	2 574 110
Europe	1 493 616	4 467 809	16 499 999	26 012 876	8 651 648
Latin America	4 902	6 106	4 811	199 188	63 547
North America	496 900	376 143	106 140	680 098	193 157
Oceania	15	252	1 104	36 580	48 351
Former Soviet Union	-	-	-	2 815 154	-
Totals	2 045 842	5 109 438	17 044 906	34 646 600	11 549 739

Source: (FAO, 1999)

In 1961 only seven countries (five European plus Japan and the United States) were importing more than 10 000 tonnes of cassava. By 1990 more than 26 countries were importing more than 10 000 tonnes. Thus, there has been both a growth in the demand for cassava as well as increased diversity of its markets. In the same time period the number of exporting countries grew from 8 to 14. In 1990 Thailand accounted for almost 76% of the total exports.

#### **IV. THE STRATEGY**

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A *raison d'être* for developing a global cassava strategy is the belief that it will contribute to the economic development of processing communities and the well-being of numerous disadvantaged individuals in the world. It is suggested that a necessary condition for the implementation of this strategy is the existence of a growing demand for cassava.

Markets that grow at the rate of population increase (primarily the human food market in producing countries) have served the cassava industry well, but have rarely been the major source of improved well-being of producers and processors. For cassava to be a contributor to development, the market must grow more rapidly than population. There are several sources of market growth. For ease of presentation these sources of growth will be referred to as concentration, innovation and competition. Any one of these sources of market growth can be the basis upon which to develop a marketing strategy.

- i) **Concentration:** Market growth can occur when the number of producers decreases but the total demand remains fairly constant. An example is increasing urbanization accompanied by continued consumption of cassava by the new urban dwellers.
- ii) **Innovation:** Market growth occurs because cassava is found to have unique characteristics suitable for a new market. Such a case might be the use of cassava for the production of monosodium glutamate, or the production of non-allergenic foods.
- iii) **Competition:** Market growth occurs because cassava becomes economically more attractive for a particular use than competing products. This has certainly been the case for cassava as an animal feed ingredient in Europe.

#### **Industry analysis**

The global cassava development strategy requires "industry analysis". Industry analysis involves stakeholders in a participatory effort to identify strengths and weaknesses in every phase of cassava production/processing/marketing and to find ways to capitalize on the system's strengths and to overcome its weaknesses. Industry analysis is a demand-driven approach to technical change through:

- i) Explicitly considering stakeholders as equal partners in determining the needs and future plans for a dynamic cassava industry.
- ii) Building a practical, shared vision for cassava development.

- iii) Helping make action plans for the industry, including the who, what, why, and how, plus the question, with whose money?
- iv) Building better linkages with private sector organizations.
- v) Making better links with and among public-sector institutions.
- vi) Co-stewardship of research and service outputs with users.
- vii) Rapid introduction of high-impact technologies through public and private sector partnerships.

Analyses of market opportunities suggest that industry analysis should centre on an array of priority products that exist or appear to have potential as growth products. The industry analysis should reveal which of these products will require special attention in the production-processing-marketing system continuum.

#### Principles and goals of industry analysis

- ✧ Sound economic and technical analysis within a participatory process
- ✧ Vertical integration of cassava production/processing/marketing
- ✧ Employ a demand-driven initiative of analysis and action in the production-processing-marketing continuum
- ✧ Lay out courses of action to solve problems ranging from farm production to the marketed product
- ✧ Aim for rapid adoption and impact of appropriate technologies
- ✧ Balance on-farm and off-farm innovation within the context of consumer needs and wants
- ✧ Achieve sustainable agricultural intensification through on-farm and off-farm technical innovation
- ✧ Increase cassava productivity to accelerate economic growth and agricultural transformation
- ✧ Identify priority marketable products both for food and industrial use

#### Proposed outcomes of industry analysis

- ✧ Increased availability of, access to and use of profitable technology
- ✧ Strengthened human and institutional capacity for agricultural and farm-to-market systems
- ✧ Favourable policy and market environments for a dynamic global cassava industry;
- ✧ Increased availability of a wide range of high-quality products at reasonable prices to consumers and good profits for producers
- ✧ Increased domestic and international political and financial support for cassava industry development

#### Product options for the future

Cassava is the basis of a multitude of products, including food, flour, animal feed, alcohol, starches for sizing paper and textiles, sweeteners, prepared foods and biodegradable products. The products are derived from a number of forms of cassava, ranging from fresh leaves and



roots to modified cassava starch. The degree of processing and the technical requirements tends to increase from the fresh form to the modified starch form.

All of the above products represent potential market development opportunities for cassava. While some cassava is sold as fresh roots or leaves, even these products usually receive some special post-harvest handling or treatment before they are consumed. As cassava normally requires some form of processing before it can be consumed or sold, processing becomes of central importance in the future of the crop.

While the market potentials are great, it must be remembered that these opportunities are location- and time-specific. Because of the specificity of market opportunities it is impossible to develop a list of priority market opportunities.

The following section, however, attempts to highlight some the benefits and challenges that might be encountered when attempting to develop different types of cassava markets.

### **Products from leaves and roots**

Fresh roots and leaves are used primarily as human food. Because of their perishability, most roots are usually consumed or marketed close to the centres of production. Traditional methods for preserving fresh roots include packing roots in moist mulch or by removing leaves two weeks prior to harvest to prolong root shelf-life to two weeks. In Colombia, CIAT researchers found that preservative treatments such as dipping in wax or paraffin of fresh roots followed by storage in plastic bags reduced vascular streak and extended storage for three to four weeks. Roots can be peeled, chopped into chunks and frozen for specialized markets.

Cassava leaves can be eaten as a fresh vegetable, ground fresh and frozen in plastic bags, or dried and ground for sale in plastic bags. Leaves are more nutritionally balanced than the roots and can help to prevent certain deficiency diseases. Leaves, however, may be high in hydrocyanic acid, but the HCN can be reduced to safe levels in most cases when the liquid is squeezed out after grinding and through evaporation during cooking.

Potential for fresh cassava: higher incomes and urbanization are associated with greater consumption of convenience foods and foods that are perceived as more desirable foods. Urbanization, in cassava-producing countries, represents an opportunity for producers to produce cassava for a larger consuming population. The implications are that cassava markets for fresh cassava can grow if products are convenient and in a more desirable form. Costa Rica has demonstrated that there is a growing export market for fresh cassava – if it is packaged in an attractive and useful manner.

The potential for fresh cassava in producing countries represents growth first through concentration although competition and innovation are important factors as well. The

potential for fresh cassava in non-producing countries represents growth through competition and innovation.

Major strategy concerns: growth through concentration suggests needs to improve production, storage and processing technology, and improved infrastructure. In this regard reducing pest and disease attack, particularly on sweet varieties, reducing HCN levels in roots and leaves, weed control, and lowering overall costs of production and processing are priority needs.

Growth through competition and innovation requires input from various sectors in the supply chain. There will be a need to develop and adopt new processing techniques to maintain the freshness of cassava and promote the convenience of the product in fresh form. In many instances the need for promotion will be a key component to developing these markets. Finally, when developing and promoting markets for fresh cassava it will be necessary to factor in information on tradition and familiarity product characteristics, such as root form, colour of skin and flesh, ease of peeling, cooking time, aroma and taste.

### **Products from dried roots**

In many countries of Africa and Latin America, cassava is processed at home or at village level to produce toasted flour (*farinha* in Brazil, *gari* in West Africa), or to make flat bread (*casabe* in the Caribbean). *Farinha* and *gari* etc. can be produced in both small- and large-scale operations.

Dried cassava as an animal feed ingredient has been a major success in Europe and as an export product for Thailand and Indonesia. Thailand, China, Brazil and Paraguay are also reported to use a substantial proportion of their cassava for the production of non-intensive swine, poultry and fish farming production. In most of the other countries of LAC, about 20% is used for animal feeds. On-farm feeding of fresh or dried cassava has been practised for a long time, and its use in balanced rations is gaining as it adds value and results in more marketable livestock products. Technical details for using dried cassava in rations are well established, both in terms of milling and blending and in animal nutrition.

FAO estimates that about 25% of world cassava output in 1992-94 was devoted to feed in the form of pellets and chips, representing a 2% increase over the 1970s (FAO 1999). Trade development by the EEC at global level and in such non-cassava producing countries as Japan and the Republic of Korea are helping to promote the use of cassava as feed.

Potential for dried cassava: in general, urbanization and rising incomes have reduced the market for fresh roots. Housewives seek convenience foods that are easy to buy, store and prepare. Thus packaged cassava and cassava flour and breads are gaining greater acceptance in some markets. (Hershey and Henry, 1997) In general terms one would expect that

urbanization provides greater market opportunities for products from dried cassava rather than fresh cassava. But both provide market opportunities in selected circumstances.

Farinha and gari in particular could be considered as convenience foods because they are easy to buy, store and prepare. These possibilities should be explored further, particularly with the increase in the African, Latin American and Caribbean population in the Western world.

Cassava flour has potential in many developing countries, particularly in Africa (and to a lesser extent in Asia) where there is a large consumption of bread made from 100% imported wheat. The degree of replacement can lead to different grades of breads and pastry products and prices for the consumer. Research will be needed to evaluate different proportions of cassava/wheat flour, working in partnership with the bakery industry.

Dried cassava in the form of meal, chips and pellets has been an important animal feed ingredient. As livestock production and consumption become more important in cassava-producing countries the need for animal feed rations is expected to increase.

Finally dried and fresh cassava can be used to produce glues and alcohol (both hydrous and anhydrous). These markets, especially those for glue and anhydrous alcohol, represent new opportunities for the use of cassava in many countries.

These potentials represent growth through concentration, innovation and competition. The combination of the growth factors will be site specific.

Major strategy concerns: given the variability of sources of growth, there will be a need to pay attention to many different aspects of the cassava system.

As noted above, growth through concentration often requires improved production, storage, processing technology and improved infrastructure. Growth through innovation suggests a need for R&D to help develop the new or refined products. Both Latin America and Africa can benefit from further commercialization and improvement of home, village-level and larger-scale processing of farinha and gari. Other products from such processing efforts as cassava meal or foo-foo (a paste-like meal made from cooked fermented tubers or cassava flour) should be identified and improved.

Because animal feeds derived from cassava compete primarily with grain crops, lowering the costs of cassava production is of great importance. Main constraints for greater use for animal feeds are lack of constancy of supply of cassava feeds throughout the year, inconsistent quality and price competitiveness with grains. Research and development are needed to help make cassava feeds competitive with cereal-based feeds.

### **Products from cassava starch**

Cassava starch is used directly in different ways or as a raw material for further processing. Special features of cassava starch are its viscosity, resistance to shear stress and resistance to freezing. The main classes of starch-based products are:

- i) Unmodified or native starch;
- ii) Modified (physical, chemical, biological) starches for industrial purposes;
- iii) Sweeteners, including high fructose syrup, glucose (dextrin, monosodium glutamate, pharmaceuticals, etc.).

Potential for cassava starch: cassava starch has high potential for growth both for industrial and human uses. The unique properties of cassava starch suggest its use for speciality markets such as baby foods, non-allergenic products and food for hospitalized persons. Cassava starch can be modified to provide characteristics that are required for more specialized food and industrial products. Modified cassava starch can compete with other starches for the production of starch for sizing paper and textiles, glues and adhesives, MSG, sweeteners, pharmaceutical dustings and disintegrating pills, biodegradable products, butanol and acetone, explosives and corrugated boxes. This potential represents growth through innovation and competition.

Major strategy concerns: growth through innovation requires R&D effort. Growth through competition may require improvements throughout the entire cassava production-processing-marketing continuum. Unmodified or native starches retain their identity as cassava-derived, and may receive unwanted trade or import restrictions based on crop of origin. Hence, native starches would be more competitive if their inherent special traits set them apart from competing starches (e.g. maize-derived, sweet potato-derived, etc.). It is important to determine and capitalize on the special traits of cassava starch that are not available in competing starches. There is need for cassava-producing countries to develop their domestic market before entering into the export market.

Modified starches would not be expected to carry forward their cassava derivation, so they may be free from trade or import restrictions that might be imposed on cassava products. Starch modification usually adds value, so efforts should be made to identify and produce modified starches and their derived products with market potential. The modified starch market exhibits a great deal of vertical integration between the producers of raw material, especially maize and potatoes, the processors and the manufacturers of the final products. Thus entry into this market may require the same type of vertical integration for modified cassava starch.

### **Additional thoughts on potential growth markets**

It must be remembered that the supply chain for cassava products tends to begin with small-scale production units followed by small-scale processing units for drying and/or milling of

cassava. These steps are often done at the home and village/local level. As the product moves through the supply chain activities, such as marketing, processing and packaging are done by fewer larger-scale units, which then distribute the final product to a larger number of consumers. This hourglass supply chain differs from that of many established agricultural products. The existence of the hourglass supply chain does suggest that growth and development of cassava product markets will benefit the large number of resource-poor farmers located on poor lands, and local processing units. The challenge is how to equip these farmers and processors with the knowledge and tools needed to provide the products that meet the requirements of growth markets. There is also the challenge of how to deal with growth markets that lead to an altered supply chain one with fewer large-scale producers. This means that when assessing market opportunities potential structural change of the supply chain needs to be evaluated.

### Implementation steps

It follows that a necessary and perhaps first step in the development of a global cassava marketing strategy is the identification of markets that are growing or could potentially grow. This would be part of the industrial analysis.

A second step in the development of a cassava marketing strategy is provision of a consistent supply of a relatively uniform product. In the early years of cassava shipments to Europe the Thais and Europeans had a number of disputes over the quality of the Thai product. Indonesia's hand-cut chips were preferred because of low moisture content and much less dust. But Thailand rapidly became the consistent supplier of large volumes of cassava, and began using improved pelleting equipment, which greatly reduced the dust problem. In the end, the new pellets and large volume shipments gave Thailand an advantage in the European market that no one has been able to duplicate.

A third step, related to step two, is to provide the market with a competitively priced product that meets the consumers' requirements. For example, it is suggested that one of the growth markets in producing countries is for convenience foods. Clearly traditional methods of pounding cassava do not meet this need. But preprocessed or partially processed foods, such as foo-foo or cassava leaves, attractively wrapped in appropriate size packages, might provide a growth market for cassava.

A fourth step is to secure the cooperation of those associated with the market opportunity. It is unlikely that any market opportunities will be realized without a concerted effort by many of the cassava system stakeholders. It is also unlikely that the producers of cassava will be able to spearhead a demand-driven market expansion although the development of a high volume gari production and marketing scheme in Nigeria appears to demonstrate that producers can avail themselves of emerging growth market opportunities (See Box).

### **African gari story**

On the road from Benin City to Lagos, Nigeria lies a village that provides an example of farmer lead development project based on gari, a cassava-based food. The exact how, whos and whys are not known but the outcome is clear. Cassava has been the driving force in transforming the life of this village.

Sometime during the 1970s or early 1980s cassava ceased to be produced in this area because of the yield loss owing to cassava mosaic and spider mites. Around 1986, IITA personnel asked some farmers to try out a new sweet potato propagation system. In one of their subsequent visits IITA personnel left some improved cassava stakes. Nothing more was done or recorded regarding the cassava, but follow-up visits continued regarding the use of the sweet potato system. On a visit in 1988 a large white structure was noted behind the house of one of the villagers. Questions about this structure revealed that the few cassava stakes that had been left behind had grown into a very profitable business.

The facts seem to be:

1. The improved cassava grew very well, better than any previous cassava, and without problems of mosaic and spider bites.
2. The villagers marketed crops and processed food along the roadside.
3. The volume of traffic greatly increased with the completion of the new road from Benin City to Lagos.
4. Their gari was very popular.

The latter observation led the villagers to think about producing more gari and selling it in Lagos, now that it was relatively easy to travel to Lagos. The exact sequence of events is not know but in the process of expanding the production and marketing of gari someone came up with the technique that greatly increased the batch size for cassava soaking and fermenting. The technique entailed sewing together large plastic bag and placing the filled bag between 2 presses that were connected by giant bolts (approximately 2 to 2.5 m in length). Nuts were tightened to squeeze the press and remove the water from the fermenting cassava. The capacity of this new technology was about 750KG. This volume of fermented gari presented problems of roasting and marketing. Roasting continues to be done the traditional way, perhaps using slightly larger skillets, but with no great change in efficiency. Marketing is now done in Lagos, with the gari being transported to Lagos and sold to wholesalers. The villagers do the transportation by the pickup truck that they purchase with help of a group credit program.

The impact on the villagers is tremendous; they now ship 750kg every day or every other day, as opposed that amount over several weeks or longer. It would appear that the bottleneck is the roasting process. The initial solution was to increase roasting effort (done almost exclusively by women) in proportion to the increased amount sold to Lagos. There seemed to be little complaints about the additional land and effort required to produce the cassava.

The point of this story is that the demand for cassava greatly increased with improved market access. The ability of the villagers to respond to this opportunity was facilitated by the availability of improved disease resistant varieties, ingenuity, credit and hard work. This combination of factors lead to the development of a cassava based industry that has generally improved the well-being of the villagers. The villagers identified the opportunities and developed the approach. The solution may not be perfect, because of the roasting bottleneck, but the villagers may also find a way to overcome this problem.

### Catalysts and champions

The Strategy requires catalysts capable of identifying marketing opportunities, and bringing these to the attention of stakeholders. It also needs champions, at every level to keep the needs of the industry before the public and decision-makers. Even if the stakeholders agree that there is a growth market for cassava, there is likely a need, for research and development, provision of infrastructure and investments, and changes in policies to grasp the new opportunity.

It could be argued that entrepreneurs will seize the opportunity and develop new markets. This might be true in a perfect, risk free world, but the entrepreneur has many alternatives, and may have successful, ongoing ventures. In such cases the development of a new market, which relies on getting supplies from a large number of small producers, may seem to be too risky. Also the entrepreneur may not have the skills or information on how to develop a new cassava product, such as convenience foods. It is because of the expectation that the free market will not always make greatest use of the potential of cassava, nor necessarily use it in a way best suited to promote development, that the *Global Strategy for Cassava* is proposed.

It would appear that the tasks of catalyst and champion are well suited for donors, international research institutions, non-governmental organizations and national governments. These agencies can bring together producers, processors, trader and consumers to help identify the course of action that will best contribute to the Global Development Strategy for cassava. These agencies, in concert with producers, processors and traders can initiate and undertake the necessary activities to develop the potential market.

The development path for cassava will be *case, country* and *time* specific. Nevertheless, it would appear that if the market growth potential exists because of a structural change in the economy (e.g. decreasing number of farmers and increasing number of urban consumers of cassava products, resulting in market growth) one would expect that NGOs and national governments would be in the best position to act as champions and catalysts.

If, on the other hand, market growth exists because cassava is price competitive then both national and international agencies may act as champions and catalysts. Finally, in the case where cassava has a unique advantage, the catalyst or champion may not be a national or international agency, but instead be an industry or corporation that has proprietary interest in cassava.

The bottom line for catalysts is the identification of growth market and the commitment of resources and energies necessary to entice others to examine the potential. On the other hand, a champion would be expected to seek constantly an improving market and economic situation for cassava and its stakeholders.

## **V. IMPLEMENTATION OF THE STRATEGY**

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The global strategy should be seen as comprising both bottom-up and top-down approaches. The bottom-up portion would be the formulation of national strategies, because national efforts will be the action-sites for implementing the global strategy. In a sense the global strategy should be seen as an amalgamation of national strategies and plans, augmented by continental and global efforts to identify and stimulate markets, obtain financing, and help provide needed changes in policies that constrain markets and production and identify and support global needs in research and development.

### **National strategy**

National strategies should evolve from a process of industry analysis. In this process, the relevance of roots and tubers, especially cassava, as a possible entry point in developing a national strategy should be explored. In particular, special reference should be given to the role of the cassava production-processing-marketing continuum in specific ecological zones or socio-geographic communities, from the viewpoint of food security or income generation and economic diversification.

The national strategy will be the nucleus for the cassava industry, and each country should formulate a long-term plan developed through industry analysis to encompass:

- i) Finding and obtaining the commitment of a national catalysts and champions for cassava;
- ii) A strong integrated R&D effort that includes financing (business not as usual --no more free ride) and addresses the minimum unique problems of the cassava industry in the country;
- iii) Strong links with regional and continental efforts, including a clear definition of assistance needed so as to avoid duplication;
- iv) Building and strengthening existing domestic markets as a basis for industrial or export growth;
- v) Building a sustained dynamic domestic cassava industry that is linked to cash/grain crops in order to reduce export risks.

### Major strategy concerns

Each country has its own strengths and weaknesses in cassava production/processing/marketing. Each has its own dreams and aspirations for its citizens. Hence, each should develop its own strategy for the future, including how it wants to see the growth and future of cassava in reaching national goals. Perhaps a country has an advantage in traditional processing that it would like to exploit in its economic development. Perhaps it wishes to become partners with a neighbouring country in improving its product lines and marketing channels. Some countries will want to establish clear lines of cooperation with potential partners in research and development activities. Bringing its main stakeholders together to plan the future of the cassava industry offers powerful potential to bring about



needed change, increased support, ingenuity, and collaboration in setting and meeting national economic goals for cassava.

### **Regional strategy**

A continental strategy per se may not be practical, especially for Africa or Asia, where distances and differences in farming systems, processing and uses are so great. Here regional or sub-continental strategies may be more useful, especially where regional entities such as ASARECA in East and Central Africa, SACCAR in Southern Africa, or CORAF in West Africa are actively involved in agricultural development and could act as champions or catalysts for cassava.

Topics of concern for regional strategies would probably not differ much from continental strategies, except they would be tailored more to the particular sub-continent or region and its problems and potentials. Once regional strategies are developed, they should be incorporated to the extent possible into continental strategies.

The regional strategy should build-on and augment national strategies. The regional strategy should include:

- i) Finding and obtaining the commitment of a regional champion or champions for cassava;
- ii) Industry analysis at regional level indicating current status, strengths, weaknesses and issues for regional attention and action needed to resolve pressing constraints;
- iii) Dissemination of relevant materials and information through workshops, exchange visits, bulletins, Internet;
- iv) Development/strengthening/promotion of regional markets through the relevant organizations such as fora for R&D, finance, economic development, and agricultural development.

### **Continental strategy**

The continental strategy expands on national and regional strategies. The continental strategy highlights the needs and support that transcend national and regional concerns. The continental cassava includes:

- i) Finding and obtaining the commitment of a continental champion or champions for cassava;
- ii) Obtaining financial support from international/development agencies such as the World Bank, African, Asian and Latin American development banks; roles of OAU, OAS, ASEAN, etc;
- iii) Formulation and implementation of plant protection systems for evaluation and monitoring of pests/diseases within the continent and that combine resistant varieties, biological control measures and plant materials sanitation and safe movement of improved cassava germplasm through public and private sector partnerships.

Continental and regional programs should include (1) R&D plans for cassava, especially in making sure that special problems of the continent are being handled effectively, (2) production and marketing of products that may be consumed in the region or may be exported outside the continent, (3) plans for collaboration within the continent in developing the production/processing/marketing continuum, and (4) make use of advances in other parts of the world through exchange of visits, training, etc..

Continental differences in production, processing and marketing of cassava must be taken into account. Therefore, each continent [or subcontinent or region in some cases] will have to develop a plan of its own. These continental plans should link with the bottom-up industry analyses and top-down plans emanating from the global review and strategy development. Some issues that may need to be considered in developing continental strategies are discussed in the following paragraphs.

### Africa

Except for Nigeria and a few other countries, cassava is still grown mainly as a staple food accounting for up to 70% of output. Increased consumption for food is the combined result of droughts, increased population, and with civil strife, devaluation of the CFA in Francophone countries and recent policies aimed at reducing cereal imports. Gari accounts for 70% of total cassava consumption in Nigeria, compared to 40-59% in Ghana, Cameroon and Côte d'Ivoire. Other forms include gari or farinha (made by grating roots, fermenting, drying in the sun, followed by heating over low heat) and foo-foo (a paste-like meal made from cooked fermented roots or flour). Young leaves can be eaten as a fresh vegetable, ground fresh and frozen in plastic bags, or dried and ground for sale in plastic bags, and being more nutritionally balanced than the roots, they help to prevent certain deficiency diseases.

Potential for the Future: There a great potential for cassava for food particularly with increased population, recurrent droughts, disasters, and market opportunities and recent policies aimed at reducing cereal imports. FAO projections are that global area devoted to cassava by 2005 will be 18. 6 million ha, with Africa accounting for about 11.9 million ha. Industry uses could expand, especially for starch and animal feeds. (FAO, 1997)

In Africa, it is estimated that the combined effect of alleviating pre-and post-harvest constraints could increase economic yield by 168% and controlling a relatively few damaging pests and diseases could produce large improvements in yield.

Major Strategy Concerns: In Africa, supporting and improving the status and performance of cassava as a food while expanding its potential commercial role should receive high priority, particularly with the rapid migration to urban centres and increasing income. This should involve public and private efforts, particularly various farmers groups who are major stakeholders, supported by infrastructure developments so as to reduce the current high

production costs and make cassava more competitive with grains. Continuing research and development efforts are needed in soil fertility, tissue culture and rapid multiplication of planting material crop protection and integrated pest management for the continent where cassava has been greatly affected by pest and disease attack.

### Asia

Cassava is almost entirely a commercial crop in Asia, playing a role in agriculture, commerce and industry. A highly versatile crop, cassava historically gained importance in Asia as a food security crop in times of political unrest, wars and famine, particularly in parts of Indonesia and India. Asia has few problems with pests and diseases, unlike Africa and LAC, Asia has little potential to increase yields by their control. Overcoming pre- and post harvest constraints is expected to increase economic yield by 116%, the lowest figure for the three continents. (Hershey, Henry, et al. 1997).

Use for feed in China represented 40% of 1992-94 total output. Also in China, India, Thailand, Indonesia and Viet Nam, starches from fresh or chipped roots are important both for human and industrial use. China and Thailand for example make noodles and sodium glutamate from processed starch at household level. (Plucknett 1995).

Potential for the Future: Trade developments in such Asian countries as Japan and Republic of Korea as well as the EEC and improved domestic markets will continue to boost the Asian cassava industry.

Major Strategy Concerns: Increased population growth, limited options by some farmers for other crops besides cassava due to environmental constraints, poor soils on which cassava is grown, all indicate the need to increase on-farm efficiency productivity and expand processing and marketing opportunities.

### Latin America and the Caribbean

Production in LAC has been stable for 25 years in a context of traditional production/processing systems and constrained markets. Over that time LAC's share of the global production dropped from 35% in 1970 to 19% in 1996, because both African and Asian production doubled, while that of production of Brazil and Paraguay, the main producers, slightly decreased. The area harvested in LAC peaked at 2.85 M Mt. in 1977. At least half of total production is used directly for human food. Animal feed and industrial uses account for 20 to 30% of production<sup>3</sup>. Brazil and Paraguay are the region's largest producers. On-farm feeding of fresh or dried cassava has been practised for a long time, but their use in balanced rations is growing. Starch production in Brazil, Columbia and Paraguay is on the rise and is used mainly in paper processing, adhesives and paper and textiles whereas in

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<sup>3</sup> Personal communiqué for Dr. Guy Henry, 2 February 1998.

Columbia, a powerful antiseptic known as cassareep and capable of preserving meat is a by-product of boiling the poisonous juice of bitter cassava varieties.

Practical soil and crop management can raise yields in LAC more than 50% and adding improvements in yield potential and pest and disease control could more than double yields. The combined effect of alleviating pre-and post-harvest constraints could increase economic yield by 133%, or the equivalent of 41 M Mt.

Potential for the Future: IFPRI projects cassava production growth in LAC to come about by increased yields (0.85% per year) and a 1.3% increase in use of cassava for animal feeds. LAC food preferences are shifting away from basic staples and more towards convenience foods, and diversified diets.

Considerable potential exists for improving additional revenues [within a range of 60-130%] from post-harvest handling and processing, the estimates being lowest for fresh roots, highest for animal feed, and intermediate for starch and flour.

Major Strategy Concerns: Increasing markets by developing convenience foods for urban dwellers, use of cassava feedstuffs, and new uses for starch and flour may be important. Moves to support industrial growth of cassava and to increase value added are needed.

### **Global strategy**

The global strategy should be seen as an amalgamation of national, regional and continental strategies and plans, augmented by global efforts to identify and stimulate markets. The global effort assists with financing, changing policies that constrain markets and production, and identifying and supporting global research and development. The global strategy cassava includes:

- i) The commitment of global champions and catalysts for cassava; e.g. CGIAR, CIAT, IFAD, World Bank, African Development Bank, Asian Development Bank, Inter-american Development Bank;
- ii) The promotion of global studies of potential new markets, including trade and policy issues that will help give cassava greater significance and economic presence;
- iii) The identification of global pest and disease problems requiring international solution, including genetic means, plant quarantine, biocontrols, and methods of solving such problems, including funding of such efforts;
- iv) The identification of potential areas for technology transfer that might benefit regions needing, but not yet using, such technology;
- v) The involvement of international institutes/centres in training, development of new materials and technologies (including use of biotechnology), and collaboration between national and regional centres. The international centres, such as International Institute of Tropical Agriculture, IITA-International Center for Tropical Agriculture, CIAT International Laboratory for Tropical Biotechnology.

ILTAB can provide post-graduate training to scientists from developing countries in cell and tissue culture, virology and molecular genetics; work on projects to create disease/pest resistant plants ... e.g. project on cassava mosaic virus.

## VI. RESEARCH AND DEVELOPMENT

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*"We now know that science-driven agricultural transformation can occur in countries that develop effective agricultural research capacities"(Working Group on International Agricultural Research, 1997).*

The past thirty years has seen an impressive growth in the cassava research capacity. Thirty years ago CIAT and IITA, the two international centres dealing with cassava, were established and beginning their research programs, and very few countries had national agricultural research services (NARS) devoted to cassava. Now most cassava producing countries have NARS with a cassava component, and the international centres have wealth of research findings. This is supplemented by years of research that been undertaken and supported by national and international agencies and organizations. As importantly there is now a global cadre of researchers and practitioners who understand cassava and its potential.

The global agricultural research system now provides an additive or multiplicative effect to national research efforts. The global agricultural research system serves as a source of new genetic materials, new methodologies, training in advanced research techniques, and provides a bridge to technical advances elsewhere.

Notwithstanding these impressive advances further research and development is needed. Each NARS should set aside resources to make sure their own scientists are active in the process of international problem-solving to ensure it is pertinent to the needs of the country.

Research and development is needed in the areas of genetic improvement and product development and processing. This needs to be supplemented by the development of organizations, institutions and policies that facilitate the development of cassava industries. Some specific R& D needs are discussed below.

### **Genetic improvement and tailoring for final uses**

The Global Cassava Strategy implies that genetic improvement of cassava be related to the use of cassava. Thus the "best" cassava is no longer the highest yielding cassava, or the cassava with the greatest resistance, unless it is the "best" cassava to use for the production of a specific product. To this end genetic resources of cassava comprise a major element of the global cassava development strategy and deserve international support and cooperation in their conservation, study and use. Both the Centro Internacional de Agricultura Tropical (CIAT) in Colombia, and the International Institute of Tropical Agriculture (IITA) in Nigeria

hold large collections of cassava germplasm. Brazil's National Center for Genetic Resources and Biotechnology holds both cassava and wild *Manihot* species, while its National Cassava and Fruit Research Center (CNPMPF) in Bahia holds the world's largest national collection of cassava germplasm.

Many of the major pests and diseases of cassava are endemic in Colombia, making this country a key location in providing 'hotspot' environments to find test genotypes for their resistance or susceptibility to those pest and disease problems.

Cassava breeding and development should follow even more closely a tailoring approach to suit final uses. More investment in research is needed for the evaluation for specific traits, for biotechnology research to help speed development of new varieties, for the improvement of integrated pest management practices, for the identification of needed genes and for the acceleration of genetic enhancement and plant breeding.

Cassava bound for fresh food is likely to contain less hydrocyanic glucosides than varieties slated for processing. Also, varieties destined for processing for starch should have high levels of starch and have peel and root forms suitable for ease of processing.

### **Production and processing strategies: possible R&D needs**

The demand driven approach inevitable leads to needs for research and development related to the production and processing of cassava. Lowering costs, increasing efficiency and improving quality become increasingly important targets for research and development. These targets also suggest the need for adaptation and validation of research results for the various stages of the cassava supply chain.

### **Some possible R&D needs include the following:**

Improved production systems to:

- ✧ produce more per unit of land;
- ✧ reduce costs of production;
- ✧ increase product value, while keeping cost of production the same or lower.

Processing research to:

- ✧ develop new products;
- ✧ adapt and develop methods and techniques of processing;
- ✧ utilize native and modified cassava starches;
- ✧ develop improved and advanced methods of modify cassava starch;
- ✧ improve small-scale processing.

Environmental research to:

- ✧ reduce soil erosion, research on motivation and practices;
- ✧ reduce pollution, especially in the production/processing for starch;
- ✧ prevent destruction of ecosystems, forests, shifting cultivation.

Institutional research, development and policy to:

- ✧ reduce barriers to the development of cassava products and markets;
- ✧ promote public/private sector partnerships;
- ✧ provide information support for the cassava development effort;
- ✧ provide necessary infrastructure;
- ✧ provide training and extension supportive of the cassava development effort.

Crop management research, development and extension to:

- ✧ improve agronomic practices
- ✧ develop improved pest management practices;
- ✧ to development appropriate mechanisation for the various stages of the cassava supply chain.

## **VII. FEEDBACK FROM REGIONAL CONSULTATIONS**

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Eight consultations on the Global Cassava Strategy were held during the past two years. The objectives of these consultations were to:

- i) Provide feedback on the draft Global Cassava Development Strategy and supplementary documents;
- ii) Formulate a set of priority issues that should be considered in the final formulation of the Strategy and its subsequent implementation.

In all instances the general strategic approach was accepted and seen as a method to advancing development in cassava producing countries. This sentiment is reflected in the comments from the Asian Regional Consultation.

*The initiative to develop a Global Cassava Strategy and Regional Review documents, as a common ground for discussion and exchange of experiences within and among regions of the world, is supported by the participants of the meeting. Given regional differences, a decentralized approach to the implementation of the strategy is called for (Hershey 1999).*

A broad range of stakeholders from the Asian and Latin American cassava sectors affirmed the importance of cassava in these regions as a vehicle for development, through income generation and for achieving greater equity among income groups. In specific regions it remains a food security crop, though its importance as such is declining. The stakeholders, participating in the African reviews, also agreed that cassava was an important vehicle for development through income generation. However the African stakeholders noted that cassava-based development activities should not diminish the food security contributions of cassava (Westby, 1998).

The stakeholders noted the importance of identifying market opportunities in their respective countries and regions. In general terms, the stakeholders identified the principal current and future market opportunities as being: the development of a wide range of cassava convenience, snack and ethnic foods, the development of native and modified starch-based products for domestic and industrial uses, the incorporation of cassava flour in bakery and confectionery industries, and the domestic use of cassava for animal feed.

The stakeholders affirmed the need to pay due attention to the environmental impact, both from the production (soil conservation; fertility maintenance) and processing (cassava drying and starch factory wastes) sides, when promoting cassava development.

Given the low levels of funding traditionally dedicated to cassava research, and minimal involvement of the private sector, maximum efficiency in use of resources is needed. In general the regional representatives ranked the priority needs for meeting development goals as being: market identification, process and product development, market development, and varietal selection and development. Also it was noted that there is a great need for information sharing, technology transfer and human resource development (training) for processors and producers.

Stakeholders noted that as agricultural production and trade become increasingly a part of a global free market system, regional coordination to achieve greater efficiency and competitiveness is ever more important. Obtaining a combination of public and private support for a continuation of this coordination is a clear future priority.

Finally, it was clearly expressed by the participants that the implementation of this strategy was the next step at both national and regional levels. It was pointed out that there exists a knowledge base and research results that should be used in the process of implementing the Strategy.

Interested stakeholders need to work together to identify areas where the Global Cassava Strategy is applicable. There is a need to apply the Strategy and validate it, perhaps through the initiation of pilot projects. In some instances there is a need to provide global and regional support to the development of national strategies. There is a need to share experiences learned. The Global Strategy should work through national fora in each of the three producing continents -Africa, Asia, and Latin America and the Caribbean -to implement continental or regional strategies.

The following were identified as some of the actions needed at the global level:

- ✧ Promote the Global Cassava Strategy;
- ✧ Seek support for Global Cassava Strategy at national, regional and global levels;
- ✧ Establish a form of coordination or network for global level activities;



- ✧ Identify a mechanism to provide follow-up on the Global Cassava Strategy;
- ✧ Develop a management information system related to the Global Cassava Strategy.

Finally, there is a need to realize that for the vision to be realized the use of cassava as an engine of growth must be included as part of a nation's development plan.

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## VALIDATION FORUM ON THE GLOBAL CASSAVA DEVELOPMENT STRATEGY

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## IFAD STATEMENT

K. van de Sand  
Assistant Director, Project Management Department

The Director of AGP and colleagues at FAO, distinguished visitors from overseas – government officials, scientists from the research centres, members of the private and civil sectors, and representatives of development agencies, including my IFAD colleagues.

Welcome to this important meeting – a “Forum” to validate the Global Cassava Development Strategy – and where else to hold a “Forum” but in Rome?

IFAD’s mandate is the alleviation of rural poverty through agricultural development, and the importance of the cassava crop in this context became apparent at an early stage of IFAD’s existence. However, it was not until 1996 that the development of a global strategy for cassava development began. Which, incidentally was before I joined IFAD, therefore I am pleased that Mr Cheikh Sourang has been able to join us to make a keynote presentation during the opening session this morning, as it was Cheikh who played a leadership role during most of the process that has resulted in the Global Cassava Development Strategy. I trust that Cheikh will take us back to the beginning of the process and highlight once again the issues that led to the initiation of this important activity. As most of you already know Cheikh took on a new challenge last year when he moved to the Global Mechanism of the UN Convention to Combat Desertification.

During the process which led to the drafting of the Global Strategy (as we came to know it in IFAD), we were fortunate to have the support of a number of organizations and institutions – and I pay tribute to these. FAO, the co-sponsor of this event, has been fully supportive throughout. CIAT, IITA, CIRAD, NRI, IDRC, and the World Bank also provided support by sponsoring the participation of an impressive group of cassava specialists – many of whom have continued to play a key role in the four years of cassava strategy-related activities that culminated in this meeting.

I expect that Cheikh Sourang will tell us about the many studies that were sponsored by IFAD, FAO, IDRC and other agencies. I will limit my comments to applauding the hard work put in by the teams involved at the national, regional and global level. These reports presented the information and generated the knowledge represented in the Global Cassava Development Strategy that we have here in front of us.

During the process leading to the cassava strategy, expectations have been raised. “What happens next?” is in the forefront of many minds. “Is this the end of the road?” or a “Break in the journey?”. We at IFAD trust that our support to the cassava strategy will be seen to

represent the initiation of an on-going process with a multi-agency Task Force to take it forward. We recognize that implementation at the national and regional level will be an important next step.

Whilst IFAD remains fully committed to cassava development, we recognize our limitations, one of which is our lack of representation at the national and regional levels. It is for this reason that we were very pleased to learn of FAO's keen interest in taking forward the Cassava Strategy into the implementation phase. Not only does FAO have the national and regional representation that IFAD lacks, it also has a cadre of expert staff in all aspects of cassava; production, processing, marketing and utilization – as we shall see from presentations during the next two days. It is therefore my pleasure to entrust the implementation of the cassava strategy to FAO's capable hands. IFAD is available to participate as a member of the Task Force if it is considered appropriate at this meeting.

Finally, before I formally declare this "Forum" open, I would like to thank the organising committee chaired by FAO's Mr Marcio Porto for the hard work that they put into making this event happen.

Thank you and enjoy the Forum!

## FAO STATEMENT AND WELCOME ADDRESS

Dr M. Duwayri  
Director, Plant Production and Protection Division

The Assistant President of IFAD,  
Representatives of Donor Community and Private Sectors,  
Distinguished Delegates and Colleagues,  
Ladies and Gentlemen,

It is an honour to welcome you today on behalf of FAO. This Forum, jointly organized by IFAD and FAO provides an opportunity for taking stock on progress made so far in the formulation of the Global Cassava Development Strategy. It is my greatest pleasure to be here with you and be part of this coalition of stakeholders, including the representatives of farmers' associations, non-governmental organizations, donor agencies, policy-makers, universities, research and development institutions and their networks, and the private sector.

At a time when a variety of approaches to poverty alleviation are being considered, increased attention is being paid to food security. In this regard, in 1994 FAO launched the Special Programme for Food Security to help countries to improve food security – through rapid increases in food production and by reducing year-to-year variability – on an economically and environmentally sustainable basis. Under this initiative cassava deserves special attention.

It is easy to understand the importance given by FAO to cassava, a crop of American origin that has spread across the tropical world to become one of the most strategic food crops in Africa, while maintaining its importance in Latin America and Asia.

It is often said that cassava is a poor man's crop and this is true. The broad agro-ecological adaptability of cassava and its ability to produce reasonable yields where most crops cannot, makes it the basis for food security at household level and an important source of dietary energy. Proof that cassava can significantly contribute to solve food insecurity was demonstrated in the recent FAO publication on *The State of Food Insecurity in the World*. One of the reasons why Ghana was able to reduce the number of undernourished people was the impact of a 39% increase in cassava yields at farmer's level. Ghana reduced undernourishment more rapidly than any other country in the world and its average food intake soared from 1 790 calories per day to more than 2 600 calories.

Restricting the role of cassava to a “subsistence crop” is not enough and is unfair. Cassava is also a good industrial raw material, as demonstrated by the numerous products manufactured from its roots. Latin America and Asia are increasingly using cassava to produce native and

modified starches, which can compete with cereals and bring higher income for developing countries. The example of Thailand, which used the full potential of the crop to export massive amounts of chips and pellets for the crucial feed sectors in Europe, is a clear one.

However, the potential and the importance of cassava is often not fully appreciated by governments of developing countries, perhaps because they are too accustomed to seeing cassava as a native crop that does not deserve as high a status as imported products. Cassava itself, with its ability to produce well under very marginal conditions maybe responsible for this lack of interest! This has to be changed and the potential of cassava as a strategic crop for the tropics will have to be recognized and exploited.

An important question posed in the Cassava Strategy Document is: "can cassava, a traditional subsistence food crop, become the raw material base for an array of processed products and industrial development and thereby contribute to agricultural transformation and economic growth in developing countries?" We believe that with a clear commitment from all types of stakeholders we can promote agricultural development taking cassava as the driving force.

I am pleased to confirm that FAO is committed to assisting member countries in implementing the Cassava Strategy at national, regional and international level. In this regard, attention will be given to strengthening linkages and partnerships, with a view to enhancing and supporting the cassava commodity chain. Special emphasis will be given to the management and exchange of information and knowledge for the development of value-added products from integrated projects through better definition of priorities, adoption of improved and responsible technologies. Sound mechanisms for coordination of interventions and investment efforts will be put in place to reduce duplication and, optimise cross-fertilisation and economies of scale.

I would like to commend IFAD for its role in launching this initiative, and IFAD and IDRC for the financial support provided during the formulation of the strategy and in the organization of this Forum. I also thank the main collaborating institutions (CIAT, CIRAD, IITA and NRI), the experts from countries who prepared Country Case studies, and the large number of representatives of both the public and private sectors who attended the five regional consultations held in 1998 and 1999. I am confident that discussions for the endorsement of the strategy and its related implementation plan of actions will be fruitful.

I wish you a successful meeting and declare the Validation Forum officially open.

Thank you all for your attention.

## KEYNOTE ADDRESS

### **Rehabilitating a long-neglected crop, as a demand-driven approach to poverty alleviation: Background and objectives, achievements and challenges**

Cheikh M. Sourang  
Senior Programme Manager  
Global Mechanism, IFAD

Distinguished Delegates,  
Dear Colleagues,  
Ladies and Gentlemen,

Four years ago, an international brainstorming meeting was convened by IFAD in Rome, to articulate a vision and initiate a process of strategic planning, to promote the development of cassava as a staple food and a source of income for hundreds of millions of poor people in Africa, Latin America and Asia.

Today, on the occasion of a much awaited Forum to validate what is known as the Global Cassava Development Strategy (GCDS), it is my privilege to present an overview of the progress made and the challenges ahead of us.

But first of all, on behalf of the representatives of the core group of institutions that have been moving this process forward, I should like first to request Mr Klemmens van de Sand and Mr M. Duwayri to convey to our expression of gratitude to IFAD and FAO respective managements, for the continuing financial and technical support as well as the policy guidance, without which we would not be here today. Among the many people in this audience who have supported our efforts, let me also recognize Mr Yahia Bouarfa, for his continuing commitment and encouragement all along.

Having said that, let me now go back to how we started, what was achieved, and where do we move from here?

#### **Poverty reduction as an entry point**

There is ample empirical evidence to show the close correlation that exists between the level of poverty of rural households in many parts of the tropical world and the role that cassava plays in their farming and food systems. This relationship is due to the comparative advantage of cassava over cereals and traditional cash crops, in terms of resistance to drought, suitability to poor soils, long-term storability, etc. ... Hence, the attractiveness of



cassava as a fall back option for households facing resource constraints, and difficult access to markets and services.

At the same time, this relationship suggests that the dissemination of sustainable production technologies, combined with the development of market opportunities for cassava, could increase household food security and contribute substantially to economic diversification and poverty alleviation.

### **Operational objectives of the GCDS**

Consequently, in light of past experiences from isolated interventions for cassava development, the 1996 Brainstorming Meeting recognized the need to formulate an overall strategic plan. Rather than a blueprint of interventions which ignore the regional specifications and the country priorities, the GCDS consists in a systematic approach to identify the opportunities and constraints at each stage of the commodity development cycle, and building bridges from research to extension, from production to consumption. In this context, special attention is paid to technical and socio-economic issues related to farming systems, gender and environment.

More specifically, the strategic planning effort has aimed at the following objectives:

- i) Identify the opportunities for private investments and public interventions to respond to market failures and to help ensure food security;
- ii) Identify constraints in order to determine and prioritize a research agenda;
- iii) Define more cost-effective institutional mechanisms to help rationalize the allocation of public and private resources for research;
- iv) Develop a framework for technical cooperation at international level in research and technology transfer that would reflect regional/national specificity and institutional comparative advantages;
- v) Set the scene for future debates on global issues, such as trade, that may affect cassava development.

### **The review and consultation process**

As the basis for the strategic planning, the reviews and consultations facilitated and (co)-financed by IFAD at international or regional levels have brought together and received support from stakeholders such as policy-makers, farmers' organizations, NGOs and the private sector; national and regional research institutes and their networks; and intergovernmental organizations of cassava producing countries in Africa, Asia and Latin America and the Caribbean.

Such meetings have enlisted the participation of international development partners such as the Food and Agriculture Organization of the United Nations (FAO), the World Bank, the International Institute of Tropical Agriculture (IITA), the International Center for Tropical Agriculture (CIAT), the United Kingdom Natural Resources Institute (NRI), the International Cooperation Centre on Agrarian Research for Development/Promotion of Tropical Amyloids

(CIRAD/PROAMYL-France), the Canadian International Development Research Centre (IDRC), Swiss Development Cooperation (SDC), the German Agency for Technical Cooperation (GTZ), and the Common Fund for Commodities (CFC).

The strategic planning work has capitalized on a series of diagnostic studies, including three regional studies (Africa; Asia; and Latin America and the Caribbean) and country case studies (including, *inter alia*, Brazil, Colombia, Ghana, Nigeria, Thailand, United Republic of Tanzania, Uganda, and Viet Nam). In addition, a number of thematic reviews related to cross-cutting issues have been initiated and co-financed by partners, with special reference to cassava markets: product definition and market identification at national and international levels; environmental aspects such as pollution from processing, soil fertility management, and soil erosion control; and food security, gender and nutrition.

An increasing number of governments have shown interest in the cassava strategy formulation. Hence the need, in respect of the related case studies and regional consultations, to proceed at a pace which allowed sufficient time for ownership on the part of all stakeholders.

A Draft Strategy Document was produced in 1998 and discussed, alongside regional reviews, during stakeholder workshops, which helped determine regional priorities. Successive regional consultations took place in 1998 and 1999:

- ✧ In Latin America (Cali, Colombia) in April 1998, with CIAT as convenor;
- ✧ In Eastern and Southern Africa (Kampala, Uganda) in March 1998, under the aegis of the Common Market for Eastern and Southern Africa (COMESA);
- ✧ In Asia (Bangkok, Thailand) in November 1998, organized by CIAT;
- ✧ In West and Central Africa (Accra, Ghana) in June 1999, under the aegis of the Conference of Ministers of Agriculture of West and Central Africa and the West African Conference of Research Managers (CORAF);
- ✧ In November 1998, a brainstorming session on research priorities was organized by African researchers from 34 countries, on the occasion of the seventh symposium of the Africa branch of the International Society for Tropical Roots and Tubers.
- ✧ In West Africa (Accra, Ghana) in June 1999, organized by IFAD and FAO.

#### **Initial outcome of the strategic planning and its linkages with relevant initiatives**

The completed case studies and the related consultations have enhanced the level of stakeholders' awareness about new investment and partnership opportunities. This process has also created a favourable environment for follow-up activities and their operational linkages with other relevant initiatives at field level. Some of these initiatives are briefly discussed below:

- ✧ A decision was taken in 1998 to extend the mandate of FAO's Inter-Governmental Group (IGG) on Grains and Pulses as an institutional channel for submission of roots and tubers development projects for co-financing by the Common Fund for

Commodities; this is a significant step towards the establishment of effective international consultation mechanisms bringing together governmental representatives from the major cassava producing and consuming countries. The fact that such a consultative mechanism does not exist, may be a reflection of the limited institutional interest that such an important crop has received in the past.

- ✧ In light of the needs and opportunities identified during the Latin America and the Caribbean stakeholders' consultation, CIAT put forward a proposal for establishing a region-wide, non-profit consortium for cassava development (which came to be known as CLAYUCA), bringing together representatives from public and private sectors, as well as NGOs and farmers' organizations. The objective is to establish a "self-financing mechanism for setting priorities, defining strategies and funding international collaborative cassava research activities that are considered by consortium members to be essential for the development of the crop in their respective countries".
- ✧ In Latin America, CIAT is already actively collaborating with IFAD-supported projects (for example in Brazil and Colombia), where arrangements have been made for training segments of IFAD's target group in the production of animal feed, using cassava roots and foliage, as an option for income diversification.
- ✧ At global level, the GCDS could serve as a basis for international collaboration and scientific cooperation, in light of established regional priorities. Finally, as a common element to interventions at all levels, the role of information and knowledge management cannot be overemphasized, as a critical activity encompassing thematic studies, market information, best practices at various stages of the research-production-consumption continuum.

### **The way forward**

In conclusion, one could perhaps venture the judgement that, in the history of man's efforts to domesticate plants for the purpose of food security or income generation, few crops other than cassava (if any) have been labelled in so many contrasting ways. For many people, the rehabilitation of cassava's image will be difficult as this crop remains victim of persistent clichés associated with the stigma of depleting soil nutrients, cyanide poisoning, or low status symbol as a staple food. For others, cassava holds promises of an easily grown, wonder crop which could solve problems of food security and generate household income and export earnings. Obviously, the truth is somewhere in between, i.e. cassava is neither a symbol of desperation nor a panacea: it is a crop that draws its uniqueness from its versatility and adaptability. Hence, its tremendous potential to contribute to rural development, as a source of food and cash, on the basis of available technological alternatives, in terms of production, processing and soil fertility management. In light of the Global Cassava Development Strategy, it appears however, that the development potential of the cassava system, as part of broader picture of the rural economy, will materialize in step with progress made in market identification and access to infrastructure and services, improvements in cassava production and processing methods, and cassava product diversification, combined with a broad-based

approach to networking and linkages at various levels and in various directions. In other words, the long-term impact of the Global Cassava Development Strategy would depend on the degree of success in mainstreaming its major thrusts into the country strategies and programmes aimed at improving the economic environment and the rural livelihoods.

### **Scaling up the implementation of the GCDS**

While the participatory elaboration and validation of the GCDS is a significant achievement, an even more daunting task will be to implement it on a large scale and in a sustainable manner. However, judging from the outcome of the stakeholders' consultations, it would seem that the solutions to this challenge hold in two key words: mainstreaming and networking. In other words, special attention should be paid to facilitating the conceptual and operational linkages between the Global Cassava Development Strategy and other relevant research or development support initiatives.

When it comes to mainstreaming, the issue is not how to determine up front the ways in which the Governments and the donors can finance the implementation of the GCDS, but the other way round, to see to what extent the main thrusts of the GCDS (e.g. food security of poor households, or income generation for women, or job creation for the youth, etc.) can enhance the impact of the specific projects and programmes supported by Governments and/or the donors. However, it may be desirable to adopt a flexible approach to the donors' and technical agencies' support to the GCDS, taking into account the thematic articulation of the strategy of such agencies in the concerned regions or countries.

A concurrent approach to mainstream will consist in identifying the interface between the sectoral and national strategies (for agriculture, rural development, poverty reduction, etc.) as elaborated by the technical and planning departments of the Government. And then, by highlighting the value added that cassava development activities can contribute to the Government strategies, there are greater chances for the GCDS to receive adequate attention from decision-makers.

There is also scope for interfacing the GCDS with relevant international conventions, including those dealing with international economic cooperation, such as the Lomé Convention. The GCDS is also relevant to international conventions on environment and sustainable development, such those dealing with biodiversity and desertification, bearing in mind the fact that many traditional varieties have been abandoned (hence a risk to biodiversity) as a result of many factors including market integration. Likewise, the increasing popularity of cassava among producers and consumers in drylands opens new prospects for collaboration with the GCDS and the Global Environment Fund (GEF).

In practical terms, the implementation of the GCDS would require a multipronged approach, at national, regional and international levels. At national level, the critical path would involve a review of experiences to identify opportunities and constraints and key stakeholders in the

cassava system, as well as champions and catalysts. The GCDS provides for a systematic approach to the research-production-consumption cycle. This will help identify the constraints and potentials at each stage of the cycle (research, production, processing and marketing), and to establish the vertical or horizontal linkages that are necessary for lifting the barriers to cassava development. Depending on the circumstances, such barriers may be related to the consumers preference, or the producers access to inputs, markets, credit, infrastructure, etc., which may be addressed through linkages with other relevant thematic programmes funded by donors.

At regional level, the formulation of the GCDS has gone a long way to discuss regional priorities and identify regional constraints. The challenge remains to formulate regional programmes that add value to national level activities and do not duplicate them.

In sub-Saharan Africa, regional project proposals have been prepared by IITA, under the aegis of the subregional roots and tubers networks in West and Central Africa, and in East and Southern Africa. Project activities are aimed at promoting sustainable production, agro-processing and market expansion with a view to improving the incomes of women and the poor, and strengthening subregional research networks.

Strategic planning activities in sub-Saharan Africa in West and Central Africa in particular, are based on significant IFAD experience in cassava development at country level, as is the case in Nigeria, Ghana, and Benin.

Ghana's commitment to a long-standing experience in cassava development is illustrated by supply of traditional foodstuffs to local and urban markets, and private sector exports of cassava chips. This provides a promising basis for a comprehensive approach to the development of commodity systems. The combined IFAD/World Bank project portfolios in Ghana comprise a diversity of interventions, ranging from rural infrastructure to provision of agricultural and rural financial services, hence the possibility of mobilizing a critical mass of activities as a contribution to agricultural transformation: this means graduating from subsistence farming to sustainable resource management. The results of IFAD's previous interventions in Ghana will be consolidated in the context of the Roots and Tubers Improvement Programme launched over a year ago, with a two-pronged emphasis on distribution of improved planting material and promotion of processing and market linkages.

A similar programme is being funded by an ADB loan in Nigeria, as a follow-up to the IFAD assisted Cassava Multiplication Programme. The latter programme has contributed to a more than threefold increase in national cassava output, making Nigeria the world's biggest producing country.

The Government of the Republic of the Niger has recently requested IFAD's assistance to implement a national initiative for cassava development including trials, multiplication and

distribution of improved varieties adapted to Sahelian conditions, and promotion of cassava processing and marketing.

In Benin, the government's commitment to cassava development and the promising achievements of IFAD's ongoing income generation and micro-finance programmes open up good prospects for field linkages.

In the Asia and the Pacific region, as stated in the regional review, there is broad consensus that cassava has a pivotal role to play in rural development. This role continues to evolve, driven largely by the globalization of markets, long-term income growth, increasing populations, new technology options for cassava and alternative energy sources. The three research and development activities identified as most important for realizing development goals are: processing and product development, market development, and varietal improvement. The identification of potential projects has followed these themes to a large degree, but with one proposal aimed at reducing the environmental impact of starch processing.

# **THE GLOBAL CASSAVA DEVELOPMENT STRATEGY IMPLEMENTATION PLAN**

## **INTRODUCTION**

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This document presents an implementation plan of the Global Cassava Development Strategy (GCDS) that was officially endorsed at the Validation Forum held in Rome from 26 to 28 April 2000. It outlines the principal areas for action that have been identified as necessary to facilitate the implementation of the strategy and lists a number of activities to be performed at the global, regional and national levels.

The Implementation Plan draws on the principles outlined in the strategy document and takes into consideration the priorities established by representatives of the public and private sectors during the various consultation meetings held in Africa, Asia and, Latin America and the Caribbean. The Plan also reflects the discussions and conclusions reached by the participants in the GCDS Validation Forum.

It was agreed at the Forum that FAO, in its condition as an international organization supported by a large number of member Governments, has a key facilitation role to play in the implementation of the Strategy. In the first place, FAO will publish the report of the Validation Forum using funds made available by IFAD. FAO will also be responsible for the maintenance, updating and enhancement of the GCDS Web Site, which is already accessible through the FAO's Web Page. It was acknowledged, however, that commitments were also required from other organizations to assist in promoting and co-ordinating the implementation of the Strategy.

## **IMPLEMENTATION AREAS**

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The GCDS should be seen as an approach to development rather than as a project in its own right. It is expected to influence the formulation, analysis, funding and implementation of policies, research programmes and projects aimed at developing the cassava sector, with the ultimate goal of promoting agricultural development for the benefit of the poor. Thus, the Implementation Plan provides a basic mechanism to facilitate the design of cassava development activities, spanning around three main areas, namely: (i) coordination; (ii) information and promotion; and (iii) linkages and integration.

## **(i) Coordination**

Since the GCDS will be implemented at the global, regional and national levels, depending on the nature of the activities, coordination will be essential to ensure that the benefits of the strategy can be shared widely. Coordination, especially in relation to research activities and projects, should help reduce duplication, allow the results of previous experiences to be taken into consideration in the launching of new initiatives and promote co-operative research and development activities at all levels. Coordination will basically involve the following:

- ✧ making available all documentation related to the GDCS;
- ✧ a careful monitoring of cassava research and development efforts;
- ✧ coordination of efforts of regional networks to optimise cross-fertilisation and economics of scale;
- ✧ provision of advice for the implementation of the GDCS at the national and regional levels;
- ✧ Respond to outside demands for information on cassava.

A Coordination Group formed by representatives of the organizations that played an active role in the development and endorsement of the Strategy will facilitate the coordination of the Strategy. Members of the Coordination Group are:

- ✧ Marcio C. M. Porto, FAO – Chair
- ✧ NeBambi Lutaladio, FAO – Secretary
- ✧ Mpoko Bokanga, IITA
- ✧ Concepción Calpe, FAO
- ✧ Hernán Ceballos, CIAT
- ✧ Guy Henry, CIRAD
- ✧ Truman Phillips, dTp Studies
- ✧ Andrew Westby, NRI
- ✧ Douglas Wholey, IFAD

Other members may be co-opted, if required.

It is envisaged that the above Coordination Group will hold regular electronic meetings, with the objective of reviewing the progress made in the implementation of the GCDS and of identifying priorities and new opportunities for the development of cassava sector.

## **(ii) Information management and promotion of the strategy**

Provision of information was identified as one of the most immediate potential contributions to the Strategy. Cassava-related information exists around the world, in ministries, research centres, universities, etc., which could be gathered and made widely available. It was agreed that FAO will act as the focal point for the supply of information on cassava and will administer the information from its headquarters in Rome and disseminate it through the



Cassava Strategy Web Site ([www.globalcassavastrategy.net](http://www.globalcassavastrategy.net)). The site will be linked to other sites of possible interest to the cassava sector. Contributions are expected from all stakeholders in providing information and identifying useful links.

At the early stages of the development of the information network, the GCDS Web Site should give access to:

- ✧ A directory of cassava-related institutions and individuals;
- ✧ FAO basic statistics on cassava, through a link to FAOSTAT;
- ✧ External data bases on cassava, including on production and processing technologies currently available or under development, through links to relevant web-sites;
- ✧ Cassava-related projects (active and completed) and information concerning new cassava project proposals in the pipeline;

Market information and links to commercial organizations (news service). It is expected that the existing regional cassava networks will create their own regional web-sites and will make information available on regional cassava developments and issues. These sites will be linked to the FAO global cassava web-site.

### **(iii) Linkages and Integration**

One basic feature of the GCDS is its integrated approach to development, involving producers, processors, traders and consumers. Integration among stakeholders also needs to be established and maintained as part of the implementation of the GCDS. This will be done at regional and global levels taking into consideration the existence of regional networks in Africa (for West/Central, Eastern and Southern Africa), in Asia and, in Latin America and the Caribbean. Support from the International Society for Tropical Root Crops (ISTRIC), the existing regional networks and key national cassava programmes will be needed for the creation of Web Sites and dissemination/maintenance of information to be linked to the central GCDS Web Site. Major linkages expected are:

- ✧ At the regional networks level;
- ✧ Between major research and development suppliers;
- ✧ With macro stakeholders, especially with the private sector;
- ✧ With information sources, including market information

## **IMPLEMENTATION ACTIVITIES**

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The undertaking of activities in the three areas identified above will need commitments from a range of institutions and groups of stakeholders. The presence of Catalysts and Champions to help and promote the implementation of activities related to Coordination, Information and Linkages/Integration is crucial for the successful implementation of the Strategy.

### **(i) Actions required at the global level**

Finding champions:

- ✧ Formulation and implementation of strategies for the generation and transfer of production and processing technologies, taking into account the major constraints for cassava production, processing and commercialisation at the regional level and existing and potential opportunities;
- ✧ Increase the awareness of the international development agencies such as the World Bank, African, Asian and Latin American Development banks to the GCDS, and encourage them to support cassava development efforts;
- ✧ Effective use of continental differences in cassava development approaches and advances to help move the less developed continents more rapidly through exchange of visits and training;
- ✧ Monitoring of global markets and policy developments that might have serious implications, either positive or negative, for the cassava economies.

### **(ii) Actions required at the regional level**

The following steps are recommended for the implementation of the GCDS at regional level:

- ✧ Finding regional champions (will these differ from the continental champions);
- ✧ Industry analysis at regional level indicating current status, strengths, weaknesses and issues for attention and action needed to resolve pressing constraints;
- ✧ Dissemination of relevant materials and information through workshops, exchange visits, bulletins, Internet;
- ✧ Development/strengthening/promotion of regional markets through the relevant organizations such as fora for research and development, finance, economic development, and agricultural development.

### **(iii) Actions required at the national level**

Each country should formulate a medium-term plan based on cassava industry analysis to encompass:

- ✧ Finding and obtaining the commitment of national champions;
- ✧ Identifying priority market and product opportunities;
- ✧ Developing a strong research and development effort that includes financing and addresses the constraints faced by the cassava industry in the country;
- ✧ Establishing strong links with regional and global partners;
- ✧ Defining potential scope for assistance and collaboration
- ✧ Identifying what is needed to Build and strengthen existing domestic markets as a basis for industrial or export growth;
- ✧ Identifying what is needed to build a sustained dynamic domestic cassava industry that is linked to cash/grain crops in order to reduce export risks.

Each country should then implement the plan.

## **ENDORSEMENT OF THE GLOBAL CASSAVA DEVELOPMENT STRATEGY**

The representatives of the public and private sectors, non-governmental organizations, farmers' organizations, international agricultural research centers (CIAT, IITA, IPGRI) and their networks (ACRAC, CEWARRNET, CLAYUCA, EARRNET, ISTRC-AB), agricultural research organizations (CIRAD, NRI), financing and donors agencies (ADB, CFC, IDRC, IFAD, IFS, USAID), Universities (Hohenheim, Bath) and selected national institutions (mainly those which contributed with Country Case Studies for the Strategy) gathered during the validation forum on the GCDS at the FAO, Rome, 26-28 April 2000:

Considering the importance of cassava, particularly its contribution in:

- ✧ Providing the livelihood of up to 500 million farmers and countless processors and traders around the world;
- ✧ Food security improvement, income generation and poverty alleviation of its producing and consuming households.

Convinced that a Global Strategy is considered necessary to:

- ✧ Identify constraints as a basis for determining and prioritising a research-development agenda, and to define more cost-effective institutional mechanisms to help rationalise the allocation of public and private resources;
- ✧ Develop a framework for technical cooperation in research and technology transfer at international level, that would reflect regional and national specificity, and institutional comparative advantages;
- ✧ Identify opportunities for private investments, for public intervention in response to situations of market failure and for food security purposes;
- ✧ Set the scene for future debates on global issues that may affect cassava development.

Convinced that the following elements of the strategy have been approved:

- ✧ It should be demand driven and/or market oriented and take advantage of market opportunities for traditional and new products;
- ✧ It should follow an integrated approach, involving, simultaneously, production, processing and marketing;
- ✧ It should have catalysts and champions to facilitate cassava development;
- ✧ It needs to be applicable to a wide range of stakeholders and implemented at various paces and levels starting from national, through regional to global;
- ✧ It should address issues of sustainability, gender and equity, and potential environment impact;
- ✧ It should address food security concerns for disaster mitigation and recovery situations.

Recognizing that the GCDS is an approach to cassava promotion and development which rely on national and regional strategies that, together, will make possible a concerted development of cassava in producing countries.

*There was a consensus among the stakeholders and participants to the forum to endorse the "Global Cassava Development Strategy", as detailed in the revised document of April 2000.*

## **ADOPTION OF OUTLINES OF A PLAN OF FOLLOW UP ACTIONS FOR THE GLOBAL CASSAVA DEVELOPMENT STRATEGY**

Taking into consideration the vision for cassava, the principles expressed in the Strategy document and the priorities established by representatives of public and private sector during the various consultation meetings;

Realising that independent of the availability of resources, there are fundamental issues with common grounds and not mutually exclusive which need to be emphasized during the implementation of the Strategy;

Convinced that Coordination, Information and, Linkage and Integration and their related activities as discussed in the working groups and final plenary session are major areas in the implementation of the Strategy;

Considering the sharing of responsibility, priority and time frame, and the minimal/moderate resource implication required in implementing the follow up actions; recognizing that:

- ✧ Coordination will be directly related to linkages and information management;
- ✧ Information and GCDS promotion will represent the major area of action;
- ✧ FAO will be the principal facilitator for the coordination of the cassava strategy;
- ✧ The Cassava Strategy Coordination Group, to be chaired by FAO, will consist of (but not limited to) the former Cassava Advisory Group (FAO, IFAD, CIAT, NRI, CIRAD, IITA);
- ✧ The Coordination Group will be directly linked to the regional and national networks.

*Participants to the forum reached a consensus and agreed to adopt the implementation proposal discussed at the final plenary session of GCDS Validation Forum on 28 April 2000.*

## APPENDICES

### VALIDATION FORUM ON THE CASSAVA DEVELOPMENT STRATEGY

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## VALIDATION FORUM ON THE CASSAVA DEVELOPMENT STRATEGY

### ORGANIZING COMMITTEE OF THE VALIDATION FORUM

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- ☞ Mpoko Bokanga, IITA
- ☞ Hernán Ceballos, CIAT
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# VALIDATION FORUM ON THE CASSAVA DEVELOPMENT STRATEGY

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## VALIDATION FORUM ON THE CASSAVA DEVELOPMENT STRATEGY

### AGENDA

#### Wednesday, 26 April 2000

- 08:30 - 11:00     - Registration  
                  - Finalising the setting up of the exhibition area
- 11:00 - 12:00     Opening ceremony  
                  - Introduction and opening remarks  
                  Dr. M. Duwayri (Director AGP) and Dr. Klemens van de Sand (Assistant  
                  President IFAD)  
                  - GCDS background, objectives and activities  
                  Cheikh Sourang (IFAD)
- 12:00 - 13:30     Lunch break
- 13:30 - 15:00     Regional reviews on cassava  
                  - Africa (M. Bokanga, IITA)  
                  - Asia (C. Heshley, CIAT)  
                  - Latin America (C. Heshley, CIAT)
- 15:00 - 15:30     Thematic review presentation  
                  - Strategic environmental assessment (R. Howeler, CIAT Asia)
- 15:30 - 16:00     Coffee break
- 16:00 - 16:30     Thematic review presentation  
                  - Global cassava market study (G. Henry, CIRAD; T. Philips (dTp Studies Inc.)
- 16:30 - 17:00     Thematic review presentation  
                  - Cassava medium-term outlook (Concepción Calpe, FAO-ESBC; Anna Coccia,  
                  FAO-ESCB)
- 17:30 - 18:30     Cocktail

#### Thursday, 27 April 2000

- 09:00 - 10:00     Global cassava development strategy  
                  - The global cassava strategy (T. Philips, dTp Studies Inc.)  
                  - A proposal for action plan for the implementation of the strategy  
                  (M. Porto, FAO-AGPC)
- 10:00 - 11:00     Comments and Discussion
- 11:00 - 11:30     Coffee break
- 11:30 - 12:00     Global programmes for commodity chains (H. Omont, IPGRI)
- 12:00 - 12:30     Formation and instructions for working groups
- 12:30 - 14:00     Lunch break
- 14:00 - 18:00     Working group sessions  
                  - Group 1: Coordination  
                  - Group 2: Information  
                  - Group 3: Linkages and Integration

## **Friday, 28 April 2000**

09:00 - 09:45	Plenary presentation by working groups
09:45 - 10:30	Comments and discussion
10:30 - 11:00	Coffee break
11:00 - 12:00	Perceptions from stakeholders - private sector - donor agencies - NGOs and farmers - ICRTCR
12:00 - 14:00	Lunch break
14:00 - 16:00	Drafting committee
16:00 - 17:00	Conclusions and recommendations for endorsement of the strategy and plan of action
17:00	Closing ceremony