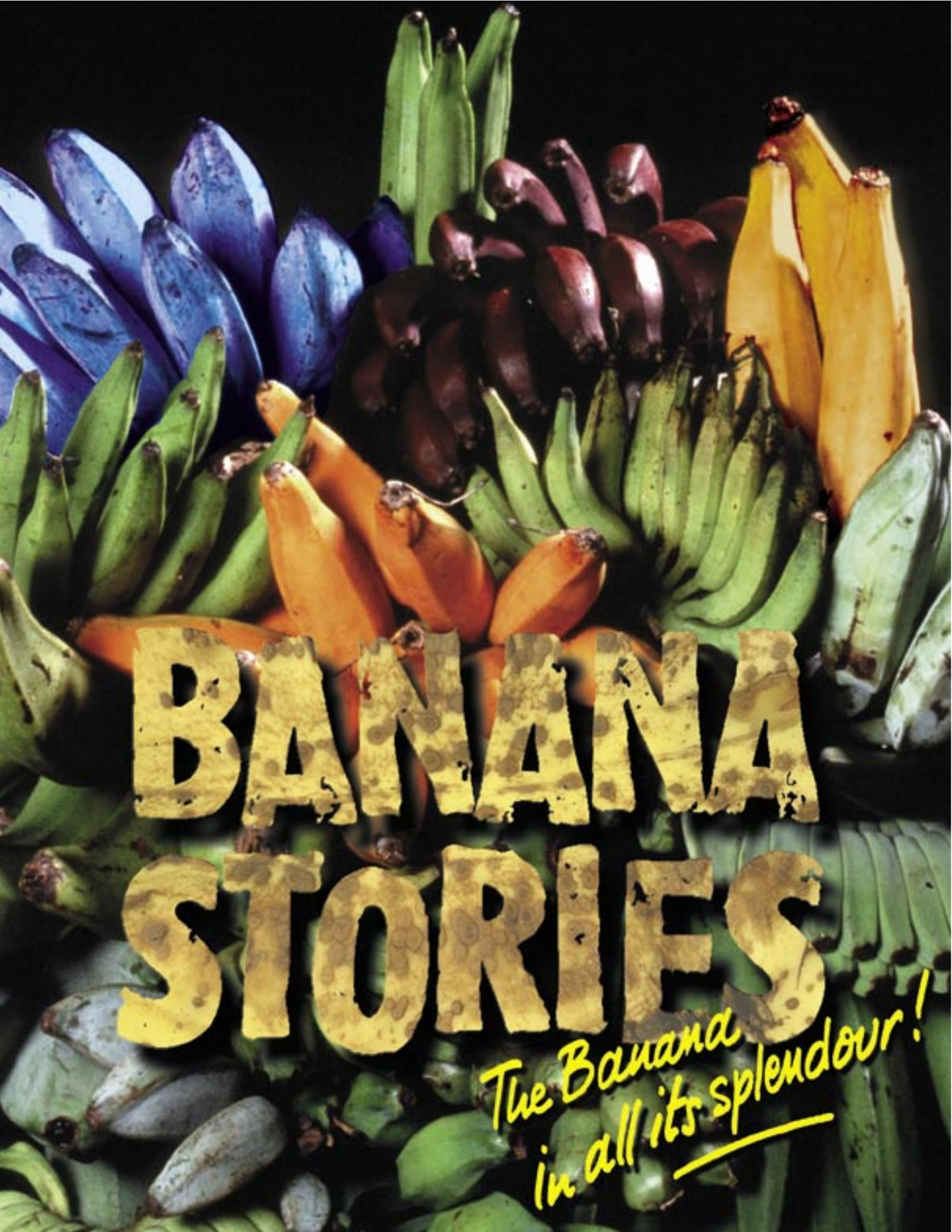
BANANA
STORIES
The Banana
in all its splendour!

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Editor: Ronald Harpelle
Contributors: Ronald Harpelle
(Lakehead University),
Jean-Marc Fleury (IDRC),
Charlotte Lusty (INIBAP)
and Linda Ross (Oxfam Canada).
Translation: Maryline Dary
Layout and design:
Claude Steenhoute, Steen Graphisme
Illustrations: Guida Joseph
Photos:
Front cover: A. Devouard/ Rea
p. 1 H. Reichel, CORPOICA
p. 2 S. Uma, NRCB, P. Puna,
Lakehead University
p. 3-21-22-23 A. Molina, INIBAP
p. 4-7-20-26 R. Swennen, KUL
p. 4 E.A. Frison, INIBAP
p. 5-6-9 S. Tripon, INIBAP
p. 8-10-11-12-16-18 S. Sharrock, INIBAP
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p. 14-15-28 E. Sauve, IDRC
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p. 21 D. Mowbray, Baobab Productions
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p. 24-25 IDRC
p. 26 N. Mateo, INIBAP
p. 27 T. Lescot, CIRAD
p. 28 D. Jones, INBAP

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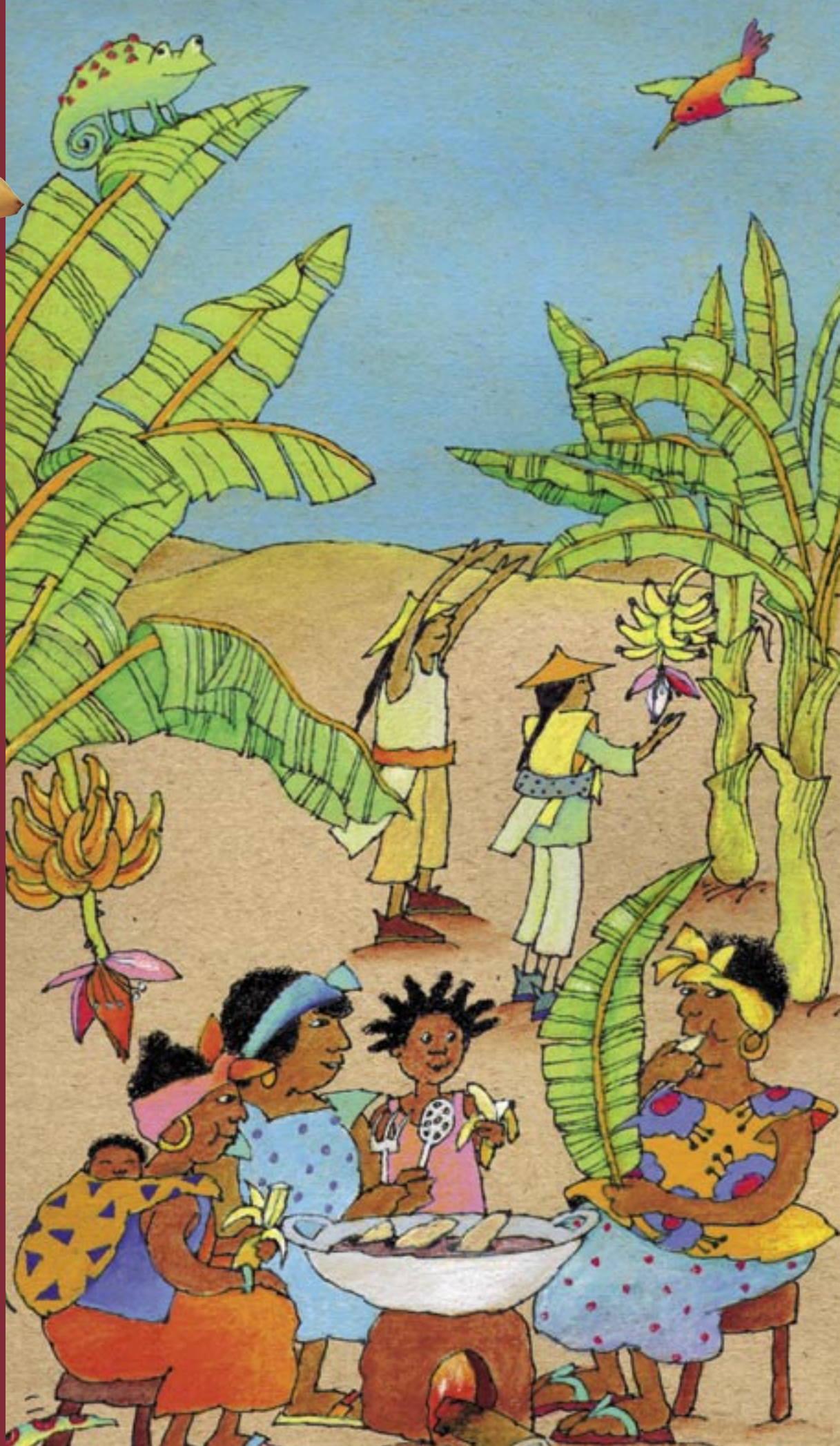
Emile Frison, Christopher Smart,
Anne Vezina, Claudine Picq,
Gisèle Morin-Labtut, Noreen Ivancic

25 N. High St.
Thunder Bay, Ontario
P7A 5R1



What do you know about bananas?

Imagine being served a banana split in a restaurant. The server places an elliptical dish in front of you and on it is a nice ripe banana cut lengthwise, smothered with ice-cream, garnished with whipped cream, maraschino cherries, pineapple slices and crushed nuts and topped with a sweet sauce that oozes down the sides. A simple everyday fruit all dressed. Or is it so simple? What do you really know about this tropical favourite that does not squeak, squirt or leak. What is the story behind the banana? Do you know where bananas come from? Do you know how many different kinds of bananas are out there? How do bananas get to market in Europe and North America? Did you know that the banana plays a significant role in the lives of millions of people all around the world? If you do not know the answers, read on and take a closer look at the historical, social, scientific and economic aspects of the most popular fruit in the world.

Banana Beginnings

The story of the banana can be divided into two separate tales. The first and most common is that of the creation of "Banana Empires" in the tropics. It is a story filled with the drama of the "Conquest of the Tropics." Although you may not be familiar with this tale of the rise of the modern banana industry, you are familiar with its product: the Cavendish banana, which represents about 99 % of the bananas that find their way to market in North America and Europe.

The Cavendish is the perfect banana because it is nutritious, sweet tasting, available everywhere, cheap to buy, easy to eat, and always good looking. Although the Cavendish is the star of the banana family, there are possibly as many as 1,000 other varieties growing in the tropics.

The second story, that of the Cavendish's extended banana family, is less dramatic, but more significant because they feed much of the world. Like the Cavendish, many other members of the family are also perfect fruit, but their reputation is based on more than good looks and sweet taste. They are all bananas, but they are not all alike and there are different ways of eating them.

The biggest difference within the banana family is between those like the Cavendish, that are sweet and eaten raw as a snack, and their starchy relatives that need to be cooked before being eaten, such as the plantain.

These are the fruits that consumers in the northern

The Nutritious Banana

Bananas are the fourth staple food in the developing world after rice, wheat and maize. They are often fried, baked or boiled as part of everyday meals. They are almost fat free and a great source of potassium, as well as vitamins, B6, C, and A, folacin, Thiamine, Riboflavin, Niacin, Magnesium, Copper, Iron Phosphorus, and Zinc. Being an easily and quickly digested food, bananas are frequently given to babies, the frail and sick and to athletes in need of a quick burst of energy. In the Wimbledon tennis tournament in Great Britain, players get through in the region of 800 bananas in two weeks.

hemisphere almost never see or taste, but they are a vital part of humanity's past, present and future. In many parts of the world bananas are more than just a dessert ingredient or snack.

In Asia, Africa, Latin America and the Caribbean, bananas and plantains represent a lifeline for poor people. In many tropical countries, bananas are a basic nutritional food item and they form a significant part of people's diets. Bananas provide a reliable source of carbohydrates, they are packed with vitamins, and they grow quickly, protecting the soil from sunlight and erosion. As a crop they are a source of steady income and they can also be grown with little or no investment after the initial purchase of land and first planting of the fruit. In some parts of the world, family-owned banana plantations are over one hundred years old and have never been replanted. Year after year, bananas keep growing from the same root stock and the same family has harvested the crop for generations. Therefore, in the developing world bananas are not taken for granted because they represent food security and the well-being of entire societies.

Bananas have long been a staple food item in Asia and the Pacific where they have been cultivated for almost 10,000 years. From this region, travellers and settlers carried banana plants with them to the Middle East and Africa where they also became a staple food. From there, European traders carried the plants to the Canary Islands, and when the Spanish began their conquest of the Americas, the fruit was introduced to the remainder of the tropics. The first plants arrived with Friar Tomas de Berlanga in 1516 and soon became a common sight in the Caribbean. Bananas became a cheap and dependable source of food for the millions of African slaves who were forced to toil on the sugar plantations of the Americas. From the islands of the Caribbean, bananas followed the Spaniards and their slaves to the mainland and spread throughout the American tropics. However, despite the migration of banana plants from one end of the world to another, the fruit are not good travellers.

We take them for granted, but until about 1900, few people living outside of the tropics knew of their existence and even fewer had eaten them. Most people do not know that the banana was the first tropical fruit to be mass-produced for the markets of North America and Europe. Other tropical and semi-tropical fruits were available long before bananas, but

The Atlantic Slave Trade

From small beginnings in 16th century to its demise in the last half of the 19th century, the Atlantic Slave Trade was one of the greatest forced migrations in history. Estimates of the number of slaves brought to the Americas vary. Tens of millions of people were captured in Africa, most died in transit, and probably about 12,000,000 survived to become slaves in the Americas. The population drain caused by the slave trade meant that the African population remained static for several centuries. In the Americas, people of African descent came to form the majority of the population in some countries of the region and large minorities in others.

none required as much care or involved as much financial risk as the "curvaceous fruit from the herbaceous plant."

Bananas are inexpensive and available year round, but few people realize how much is involved in bringing bananas to market. The plantations are thousands of kilometres away from Europe and North America and the fruit needs to go through many hands before reaching its ultimate destination. Once the machete has severed the bunch from the plant, they must pass from hand to hand in a highly synchronized harvest, packing and distribution chain.

Within three weeks of cutting, the fruit has to be packed in boxes, shipped by land and sea, unloaded at distant port, transported to a distributor's warehouse, ripened, then delivered and displayed in the fruit section of the grocery store. If anything should happen along the way to hold up or alter their travel itinerary, the fruit will ripen too quickly and end up being sold to a bakery as an ingredient for banana bread.

Bananas need to travel first class and do not like waiting around, therefore, they only began making a regular appearance in northern climes when they could be provided with comfortable and climate-controlled compartments on fast ships. Prior to the advent of steam ships and refrigeration, small quantities of bananas periodically turned up, worse for wear, at sea ports in Europe and North America. Since there was no real market for this exotic tropical fruit, it was hard to sell them and no one imagined getting rich on bananas. Everything began to change in North America after the 1876 Philadelphia Centennial Exhibition when bananas were wrapped in foil and

A North American Favourite

Bananas do not grow in cold climates and they are one of the most fragile fruits, but it would be hard to find anyone in the world who has never eaten one. This world wide love for the "meal in a peel" is a bit surprising given the difficulty of bringing perfect looking bananas to market in Europe and North America. Today, Canadians eat about 14 kilograms of bananas per person each year, making up about 12 % of their entire fruit intake. Even apples, which are produced in Canada, are no competition for the banana. Throughout Europe and the United States the banana is one of, if not the, best seller among all the fruits available to consumers. Bananas are the number three selling item in UK supermarkets only after petrol and lottery tickets.

sold for 10 cents each. For the first time, bananas had mass exposure in the United States and then, with steamships sailing back and forth to the Caribbean, the banana industry began to take shape.

A major turning point in the history of the modern banana came in the 1880s when entrepreneurs started importing the fruit into the United States. The first significant shipments of bananas were imported to the United States in the early 1870s and by the turn of the century the United States was importing 16 million bunches a year. Although getting the fruit from the tropics to northern ports was straightforward enough, expanding the market and making bananas a profitable commodity was a more difficult proposition. Fortunately, for the people who began buying in the tropics and shipping north, the rise of the United States as an economic power created a new and expanding market for goods produced outside the country. The Caribbean region produced few manufactured goods, but had enormous agricultural potential and investors from Europe and North America seized upon the opportunities existing in the tropics.

The story of how the international trade in bananas developed can be traced to Costa Rica and the construction of a railway from the highlands to

the Caribbean coast. The man hired to do the job was entrepreneur, Minor Cooper Keith, who, while overseeing the building of the railway, began planting bananas along the tracks and exporting them to the United States. The fruit flourished in the tropical lowlands of the Caribbean basin and Minor Keith began shipping them north even before construction on the railway was complete. In 1880 Keith exported 360 bunches and by 1890, when the last spike on the Costa Rican railway was driven, over a million bunches left Costa Rica for the United States. The rapid increase in the size of the export market let Keith expand his plantations until he controlled 800,000 acres of land in Costa Rica. Then, he imported cheap labour and began producing huge quantities of bananas for export. By 1900, exports climbed to 3.5 million and two years later to 4 million and in 1908 to around ten million bunches. The peak came in 1913 when Costa Rica became the world's leading exporter of bananas with the export of 11,117,833 bunches, which were destined primarily for the United States.

As the market for bananas increased, other entrepreneurs joined Minor Keith in supplying the growing demand for the fruit in North America and

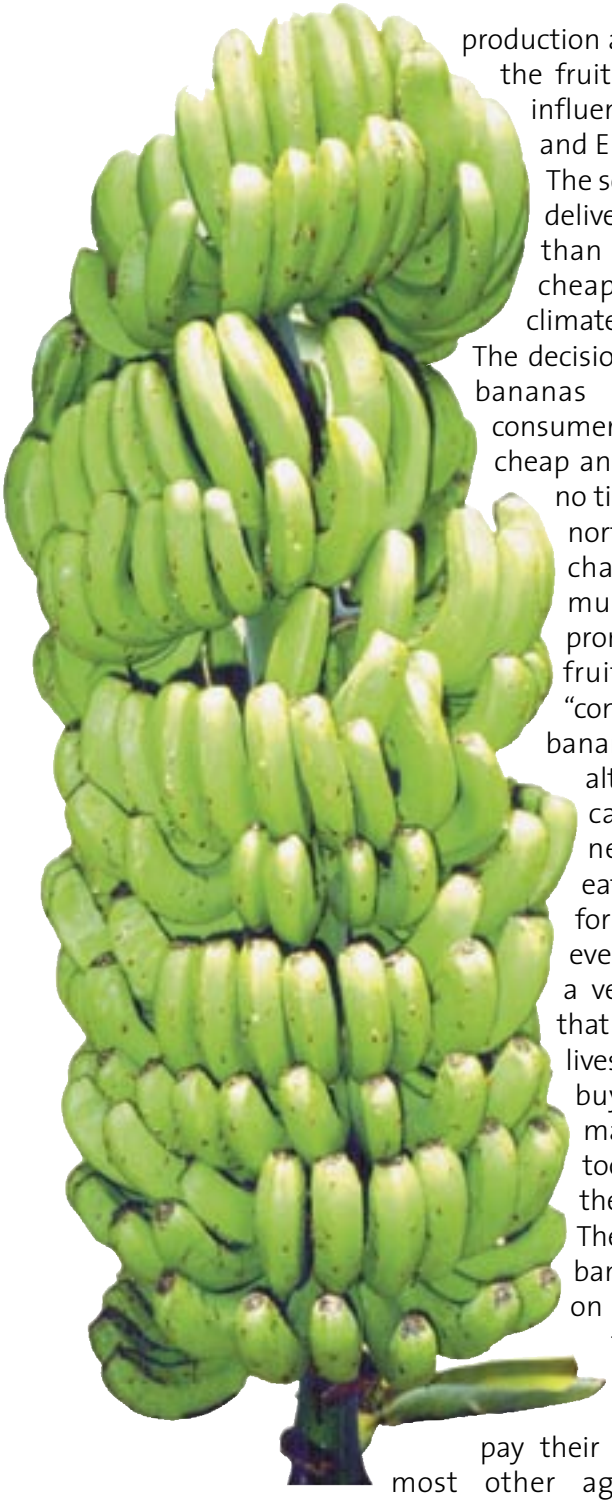
Banana Industry Today

Today, the banana industry is a billion dollar industry and bananas are the fifth largest agricultural commodity in world trade after cereals, sugar, coffee and cocoa. In many developing countries the banana industry plays an enormous role in the national economy. For example, in at least 15 Latin American and Caribbean countries, people have come to depend on the banana as a major source of export income. In Central America banana exports have been one of the most important export commodities since 1900 and only coffee exports have occasionally surpassed bananas in value. Increased demand for export bananas increases opportunities for farmers in producing countries, but the difficulty of getting bananas to export means that producers are obliged to work with the large corporations that control transportation and distribution. Consequently, in addition to being the biggest employer in a country, multinational corporations are often the only access independent producers have to world markets.

Europe. Co-ordinating the mass production and transportation was a tricky business, so most of the early banana companies failed. The survivors found that an economy of scale was necessary to maximize profits and they merged to form some of the first modern multinational corporations.

For example, in 1899 Minor Keith merged his Tropical Trading Company with the Boston Fruit Company to form the United Fruit Company which became the largest banana company in the world. From the onset, United Fruit had plantations in Colombia, Costa Rica, Cuba, Jamaica, Nicaragua, Panama and the Dominican Republic. Access to land in the tropics was essential to the development of an industry, but the corporations also needed to control all aspects of production, transportation and marketing of the fruit to ensure that bananas arrived at their final destination on time. On the production end, tropical forests were destroyed and the landscape was altered to favour the monoculture of bananas. The most suitable locations for banana plantations were on flat coastal plains where massive amounts of rainfall could be expected. As a result, commercial banana plantations ringed the Caribbean Sea and were also developed in West Africa and Asia. Millions of hectares of tropical jungle were cleared, swamps were drained and fields were planted with the fruit. Hundreds of thousands of workers were attracted to the plantations and in most places the corporations built towns where they provided housing, healthcare and schools. The banana companies also built docks, roads and railways lines that connected to every corner of the plantation region to the markets of the world. Everything was put in place to ensure efficient production and quick transport and maximum profit for the banana companies.

The best example of how important a communication and transportation infrastructure was to the banana industry is the United Fruit Company's "Great White Fleet" which owned almost 100 ships at its peak. Typically, a ship was dispatched from a port like New York and then a call would go out to banana port in the Caribbean basin advising them to start cutting the fruit. Individual farmers were contacted, plantation workers were sent out to the fields, and the scramble was on to fill the ship. As the ship approached the port, bananas started arriving from all directions and the fruit was waiting in railcars when the boat docked. Even though private planters were allowed to market their fruit through the banana companies in many banana producing countries, the corporations always loaded their fruit first. Then, around the clock, workers loaded the ship until its hold was filled. The ship was then sent to a designated port where it was unloaded with equal speed and the bananas were dispatched by truck and rail to warehouses across Europe and North America where it was ripened and sold to local fruit sellers. Along with the



production and transportation of the banana, the fruit companies also worked hard to influence consumers in North America and Europe.

The scale of production and reliability of delivery made bananas less expensive than other tropical fruits and often cheaper than fruits from the colder climates of North America and Europe. The decision to flood northern markets with bananas created expectations among consumers. People became accustomed to a cheap and constant supply of bananas. In no time, the attitude of people living in northern latitudes towards bananas changed dramatically. The multinational banana companies promoted the banana as a wholesome fruit that was nutritious and "convenient for the lunch pail." The banana was marketed as a sanitary alternative to other fruits because it came wrapped in its peel and needed no washing. It could be eaten as a snack, served with cereal for breakfast, form part of a salad or even be fried for supper. Bananas were a versatile and affordable food item that consumers welcomed into their lives. This impact on the diets and buying habits of consumers was matched by the transformation that took place in the lives of people in the tropics.

There is no doubt that the banana industry has an impact on the people and the countries that produce the fruit for export. Banana companies employ thousands of people and tend to pay their full-time employees better than most other agricultural industries. Housing, education, health care and other services come with a full-time job. In the past, the companies worked hard to conquer tropical diseases such as malaria and their agricultural laboratories conducted important research on tropical agriculture. Fruit companies also build roads and port facilities that benefit everyone and all of these activities provide for a number of economic spin-offs in the communities that provide services for the industry. However, the benefits of intensive commercial banana production must also be judged in the light of the challenges faced by developing countries that depend on the industry.

While the development of the banana industry brings tangible benefits to the countries where the industry develops, it also creates serious problems

How bananas ripen:

• Bananas do not bruise as they age, unless they are mishandled. Rather, they turn yellow and then turn black as they age.

• This is a natural process initiated by the hormone ethylene, a ripening agent found in the skin of the banana.

• Ethylene turns the green banana into the yellow fruit that is available at the supermarket.

• However, ethylene continues the ripening process, slowly turning the banana black.

• There is no way to stop this process, but it can be slowed by placing the banana in a cool place.

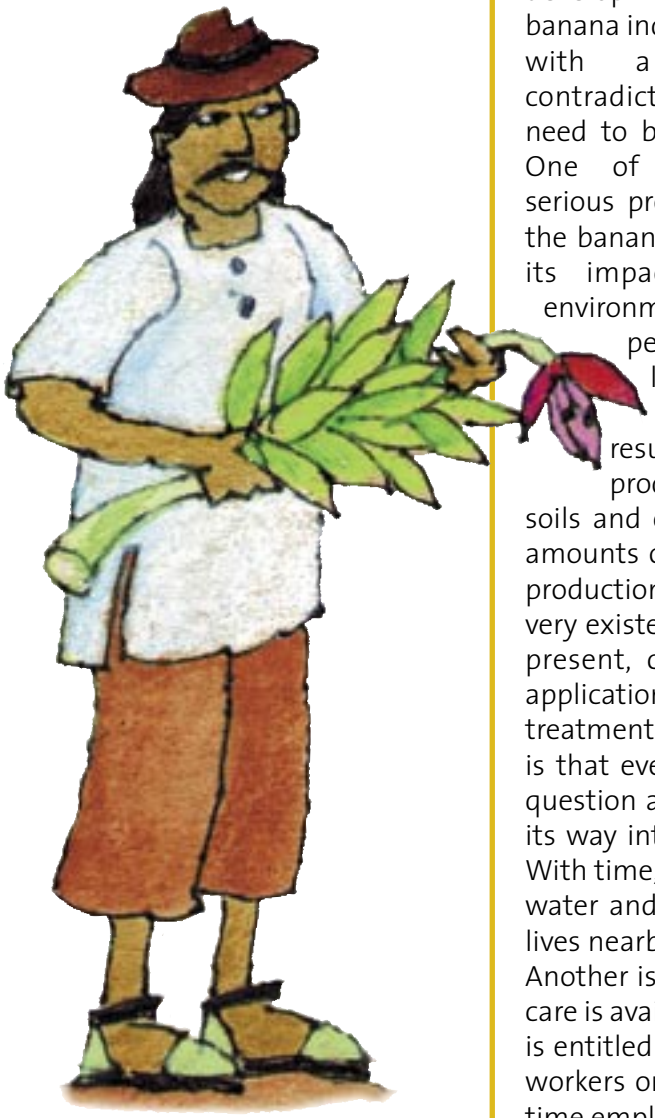
• However, the refrigerator will cause the banana to blacken more quickly.

• The cold air, to which the banana is exposed, causes the production of blackening compounds known as polyphenols.

for host societies.

Bananas are an internationally traded commodity that is subject to trends in the global market place. Banana plantations also require lots of land, labour and rain.

Therefore, new regions of the tropics have to be opened up with the development of the industry. This has meant the creation of new opportunities, but each aspect of the development of the banana industry comes with a set of contradictions that need to be addressed. One of the most serious problems with the banana industry is its impact on the environment and the people who live in the vicinity of a plantation.



A major environmental concern is the impact of erosion that results from the deforestation required to bring plantations into production. Topsoil is washed away with the rain leaving behind poor soils and clogged rivers. Banana companies respond by using increasing amounts of artificial fertilizers and by constantly bringing new areas into production. Another serious problem, and one that is now threatening the very existence of the Cavendish banana, is the spread of plant diseases. At present, chemicals are sprayed on bananas every week. With every application the diseases that affect bananas become more resistant to treatment and the problem becomes more difficult to overcome. The result is that every time chemicals are used the future of the banana is put in question and, to make matters worse, the residue from the spraying finds its way into the streams and the rivers that cut through the plantations. With time, the fertilizers and chemicals also make their way into the ground water and are ingested by workers, their families and everyone else who lives nearby.

Another issue of concern is that although housing, education and medical care is available to full-time workers, not everyone works for the company or is entitled to benefits. Most workers on a banana plantation are part-time workers or day labourers who are not entitled to the same things as full-time employees. In addition to being given the dirtiest and most dangerous jobs, these people are also paid less and are less able to provide basic needs for their families. Nevertheless, the corporations do hire thousands of men and women in the tropics and any threat to the banana is a threat to the

well-being of entire communities.

Similarly, many smallholder farmers live in the shadows of the large plantations. These farmers might even grow bananas for export, but they must pay for their children's education and provide for their families without the benefit of a secure income from the banana companies. Every decision made by the corporation affects these smallholder farmers and they are powerless to control their future as long as they are somehow connected to the plantations. Regardless of who they are, the people who have made their homes in a plantation region all face similar challenges and the problems associated with large-scale commercial production of bananas need to be addressed. Despite the inequities, the biggest challenge to the future of the banana and the people who rely on it to earn their livelihoods and feed their families is the spread of plant diseases that are resistant to the chemical treatments currently being employed.

Plant disease is the most pressing concern because without bananas there is no possibility of dealing with the other issues. Environmental costs will climb, the health of millions will suffer and the future could look bleak. To combat plant disease, one of the most viable solutions lies in building a better banana or more accurately a suite of banana varieties that can resist the most common plant diseases and fulfill the needs of people in developing countries. The development of disease resistant banana varieties would go a long way to eliminating the need for the chemical control of pests.

For commercial plantations, rational cultivation methods would reduce the impact of erosion and people in rich countries could pay a bit more for their fruit to offset the costs of a changeover to sustainable agricultural production.

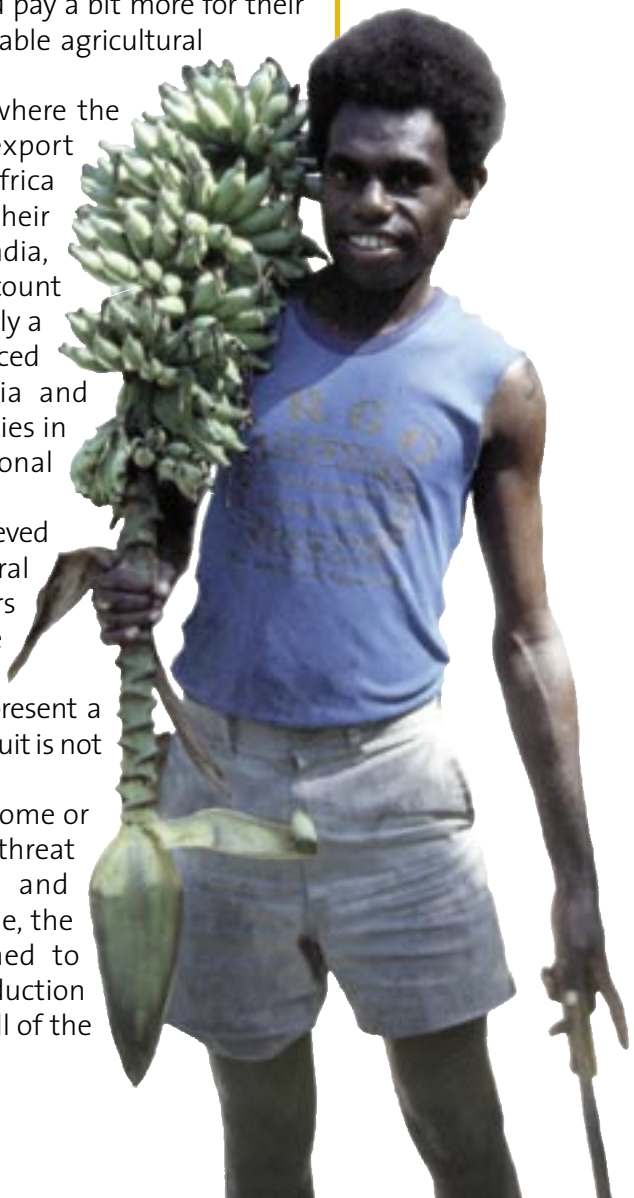
In contrast to the areas of industrial production where the fruit is almost exclusively produced for the export market, millions of smallholder farmers in Asia, Africa and Latin America also grow bananas for feeding their families and selling in local or national markets. India, Uganda, Brazil, Ecuador, Philippines and China account for about half of the total world production and only a fraction of all the bananas and plantains produced annually are traded on the world market. India and Uganda, the two biggest banana-producing countries in the world, are hardly involved in the international banana trade.

In fact, most of the world's banana production is achieved with little reliance on commercial agricultural techniques and chemical treatments, but producers everywhere are increasingly faced with the same challenges that confront large-scale commercial growers. In many developing countries, bananas represent a significant part of the national economy even if the fruit is not exported.

Millions of people worldwide rely on bananas for some or even all of their household income. Therefore, any threat to bananas could bring disaster to farmers and agricultural workers across the tropics. For example, the fruit companies in Honduras recently threatened to abandon the plantations because the costs of production were too high after a hurricane destroyed almost all of the

The Chiquita Banana Jingle

"I'm Chiquita banana and I've come to say
- Bananas have to ripen in a certain way
- When they are fleck'd with brown and have a golden hue
- Bananas taste the best and are best for you
- You can put them in a salad
- You can put them in a pie-aye
- Any way you want to eat them
- It's impossible to beat them
- But, bananas like the climate of the very, very tropical equator
- So you should never put bananas in the refrigerator."



country's plantations. But getting out of the export banana business is rarely an option for developing countries because there are few alternatives. The land would have to be purchased by the government and distributed among individuals, but what then? Land previously dedicated to industrial banana production is not really suitable for the cultivation of other crops. Soils are often sterile because the topsoil has washed away and the amount of rain required by bananas is more than most other food plants need. Banana workers are not farmers and they would all need to be retrained if the industry were to disappear. In addition, all of the problems that face the banana industry are also concerns of smallholder farmers. Therefore, solutions to the problems faced by people who are dependent on the banana industry for employment or the fruit as a staple food, must build upon the continued existence of the banana in people's lives.

This is why governments in Europe, North America and other wealthy nations are investing in research to help combat plant disease and to otherwise improve the lives of people in poorer countries. When rich countries get involved in solving the problems faced by the developing world it is called international development assistance. Although much more needs to be done, organizations like Canada's International Development Research Centre (IDRC), the International Network for the Improvement of Banana and Plantain (INIBAP) and Oxfam are making a difference. International development might appear to be something for people living far away, but it is everybody's concern.

Ronald Harpelle
teaches History at Lakehead University

What is International Development?

Have you ever wondered what is meant by International Development and how it benefits people in developing countries? For thirty years Canada's International Development Research Centre (IDRC) has been supporting research programs in far off countries. Development assistance takes many shapes, from emergency food aid, to building adequate housing, to funding research to solve the problems that people in poor countries face on a daily basis. Also, many factors are at play during the course of an aid project which makes it nearly impossible to untangle its impact and contribution. Even if it is sometimes difficult to see the results of investments in change, international development works and organizations like the IDRC play a vital role in the lives of millions of people in the developing world.

One such example that illustrates the long term and far-reaching benefits of the contribution by Canadian organizations is the financial support given to several Chilean researchers and intellectuals between 1973 and 1990, while Chile was under the military regime of General Augusto Pinochet. These prominent individuals were more or less barred from official circles because of their political views and opposition to the government. The IDRC and CIDA, as well as some foundations from the United States, sustained their research activity. This was a concerted aid effort to maintain crucial Chilean intellectual capital for an eventual return to democracy. During a difficult period in Chile's history, these researchers were given the means to continue to study, research and write about subjects their government would not support. When General Pinochet left power in 1990 and elections were held, nearly half of the members of the first democratically elected Chilean cabinet had received support from international aid agencies like

Canada's Contribution to International Development

The International Development Research Centre is a public corporation created by the Canadian government to help communities in the developing world find solutions to social, economic, and environmental problems through research. It was created in 1970, has its headquarters in Ottawa and six offices overseas. The IDRC and the Canadian International Development Agency, (CIDA) are Canada's two leading international development agencies. CIDA was created in 1968 to handle most of the Canadian government's development assistance budget. The IDRC and CIDA often work together to provide development assistance.

The Example of Chile

Before the overthrow of the government of President Salvador Allende in 1973, Chile had a long history of democracy. While other countries in Latin America experienced hardship and suffered under dictatorships throughout the 20th century, Chile developed a society and democratic institutions that set it apart. Chileans enjoyed a higher standard of living and a greater degree of social equality than most other citizens of Latin American countries. However, a coup produced a dictatorship that lasted until 1990. The results were a decrease in government spending on social programs and an increase in the disparities between rich and poor Chileans. International development assistance ensured that the voices of democracy were not silenced and helped ordinary Chileans cope with the decline in social services provided by their government.

the IDRC. In December 2002, Chilean Senator Alejandro Foxley, one of the researchers supported by Canadian aid during the Pinochet regime, commented on the role of international aid, calling it "extremely important and crucial" to the development of Chile.

Development assistance is not only aimed at advanced research and high tech projects. Some of the most important success stories are those that require little investment. One such example exists in Santiago, 600 kilometres north, in the village of Chungungo. It was from this location that Senator Foxley made his speech. Behind him, high on El Tofo mountain, remnants of a fog catching system, one of IDRC's most celebrated projects, floated in the wind. The fog catchers were built in the early 1990s as a means of allowing a community without a potable water supply to tap water from the clouds. This collaboration by Chilean and Canadian scientists was a dream come true for the people of Chungungo.

The fog catchers are simple sheets of plastic mesh, 4 x 12 metres, spread vertically between posts, on the mountain above the village. Droplets of fog, which comes daily from the nearby Pacific Ocean, condensate on the mesh. Within 10 to 15 minutes, the droplets gather into little streams of water that flow down to a pipe that brings the water to Chungungo, 750 metres below. When the fog catchers were installed, villagers danced with joy. Villager Nedielko Morales was quoted in the New York Times as saying "I think we have a future now."

Over the next few years more fog catchers were built and by 1999, 92 were providing fresh water to the village of Chungungo. Prior to the advent of the Fog Catchers, the villagers' only source of potable water was water hauled in rusty old trucks. With the fog catchers the villagers finally had an ample supply of pure water, taken from the clouds above them. Chungungo was the first community in the world to tap clouds. With this technology, life began to change for its residents. A secure water supply made life easier, more healthy and cheaper for the people of Chungungo. The success of the fog catchers was such that people who had left the village came back after the water started to flow in Chungungo. As a result, the population of the village doubled to more than 600 inhabitants in only a few years. However, while Senator Foxley was thanking the IDRC for its contributions to development in Chile, the much-celebrated fog catching system in Chungungo was falling into disrepair. What happened in Chungungo?

Following the installation of the fog catchers, the inhabitants of Chungungo each enjoyed about 30 litres of fresh water per day for several years, a major improvement to the quality of life in the community. A committee of villagers was set up to manage the new resource and oversee the distribution of water in Chungungo, a necessary step because people no longer moved away and hundreds returned to Chungungo because of the sudden availability of fresh water. Some families began growing vegetables, there were health benefits and the future looked bright. Journalists and television crews from all over the world came to interview the people of Chungungo and to record images of the new prosperity.

The problem with the fog catching project in Chungungo was that technicians from Chile's National Forestry Corporation (CONAF) were responsible for maintaining and repairing the nets and none of the locals were trained to manage the system. The villagers themselves never really took charge of the collection system and only managed the distribution. Although the water from the fog was good, plentiful and reliable, the fog catchers were too complicated for the villagers to maintain. As a result, when the Chilean government discontinued its support for the maintenance of the fog catching system, the water supply started to dry up and some of the people living in Chungungo found themselves once again having to rely on trucked-in water for their needs. The success of the project came at an unforseen price, but there is a silver lining to this story because the main achievement of the project might have been to energize the community.

The downfall of the fog catchers was that the people of Chungungo did not initiate the project and never made it theirs. They managed the water while it was available and demonstrated how prosperous their village could be with a reliable source of fresh water. The fog catchers were a key factor in the new expansion and assertiveness of the community. Now that the people of Chungungo have experienced the benefits of a stable water

supply, they are organizing to demand that their government provide them with piped in water because it is the most secure source available.

These two examples show the difficulty of directly linking aid and socio-economic progress, but they also demonstrate that benefits are not always immediate or predictable. The most important thing about international development is that it is often the people themselves who are in the best position to decide what the benefits of development are for them.

The efforts to build a better banana are a perfect illustration of how long term investment and persistence are needed to achieve results in difficult areas of research. For the smallholder farmer, bananas and plantains provide food security the way fresh water provided security to the people of Chungungo. The problem for banana growers is not that they do not know how to produce the fruit, but that bananas are beset by diseases that reduce yields and threaten the very existence of the fruit. The IDRC has invested in several projects aimed at improving banana production by smallholder farmers. One of the most important projects has been to support research into breeding a better banana.

The outcome of IDRC's long-term thinking is the development of the Goldfinger banana by the Honduran Foundation for Agricultural Research, (FHIA). The Goldfinger banana is a high performing banana with built-in immunity to pests and disease. After decades of research the Goldfinger is the first banana variety that has the potential to replace the standard Cavendish variety. Plant disease is rampant among bananas and the costs of control are excessive. Therefore, the Goldfinger banana may be the future of the world's banana export industry. The same diseases that affect commercial growers also reduce yields for smallholder farmers everywhere and the development of the Goldfinger variety, together with other new varieties, could bring reliable food supplies for the millions of people in Africa, Asia and Latin America for whom bananas and plantains are staple foods.

The development of the new Goldfinger banana was a lengthy process requiring years of patient, careful experimentation and observation. The biggest challenge in breeding new varieties of bananas is that they do not produce seeds. Bananas and plantains are multiplied by replanting offshoots from mature plants. Basically, this means that banana plants are clones of one another and in order to breed new varieties, researchers must rely on wild species or other varieties that may be poor for eating but do produce viable pollen or seeds. The wild varieties may also have other desired qualities such as disease resistance that can be crossed with standard varieties having good eating qualities. To produce the Goldfinger banana, researchers drew on a gene pool of over 800 cultivars collected in Southeast Asia.

In Uganda, Research on Bananas is a Priority

• In 1991, the government of Uganda declared bananas as the priority research food crop.

• Researchers from the Kawanda Agricultural Research Institute, about 12 km north of Kampala are working with planting material of the Goldfinger and other varieties that were developed at the Honduran Foundation for Agricultural Research (FHIA) in La Lima, Honduras.

• With the participation of banana growers on several farms, the new varieties are being tested, including the Goldfinger, and new ways to improve production and cropping using safe, sustainable and environmentally friendly technologies are being developed.

The techniques that prove successful, will be promoted to banana producers around the country.

Once the plant breeding program was established with a wide diversity of parent plants to draw from, the next hurdle was to bring together the most attractive characteristics by crossing the different varieties. The pollination of flowers is a painstaking process that requires technicians to pollinate each flower by hand. Three months later, when the fruit are harvested, they are peeled by hand, mashed in a press and passed through a sieve. Thousands of bananas are pressed to find one or two seeds and only about half are successfully germinated to produce young plants. The new generation then becomes the next building block on the way to developing new hybrids. During the years leading up to the successful development of the Goldfinger, thousands of hybrid plants were cultivated, but few survived the process of selecting the most viable new banana.

The first significant breakthrough came in 1977 with the development of a hybrid that had good bunch size and was resistant to pests and to one of the most common plant diseases. Crossed with a female clone of the Brazilian apple-flavoured Dwarf Prata variety, the new hybrid showed good resistance to Black leaf streak disease (commonly known as Black Sigatoka), a fungal disease that causes damage to the leaves and premature ripening, cutting fruit production, in some cases, by half. This resistance to Black leaf streak disease was an especially important feature, because it is the most economically damaging disease to have spread through plantations worldwide in the past three decades. It can be controlled only by intensive applications of fungicides that bring a financial burden to the smallholder farmer that is unsupportable. Many have withdrawn from production.

Goldfinger bananas resist this disease and perform well under many conditions, including where poorer soils and cooler temperatures exist. This means that growers do not have to use expensive and environmentally damaging chemical fungicides on their banana crops, and that even people who do not live on ideal land can grow the fruit. Other qualities that made the Goldfinger banana stand out for the FHIA team are its productivity and suitability for smallholder production in areas where traditional varieties do not grow. Therefore, smallholder farmers can look forward to a fruit that costs less to grow and that produces more per hectare. To top things off, the Goldfinger has a flavour that is proving popular with consumers, it ships well, and the fruit ripens slowly.

The Goldfinger banana is being tested in different environments around the world for its productivity. In Uganda, where bananas are extensively grown, the Goldfinger banana is a welcome sight. In recent years, population pressures have reduced the average farm size, which has reduced the traditionally high production of bananas. Diminished soil fertility, diseases, and pests have also combined to reduce yields.

Development Facts

Here are some of the most commonly cited statistics:

- *the share of the world population living on less than US $1 a day has decreased from 55 % in 1950 to 20 % in 1998;*
- *infant mortality has fallen from 158 per 1,000 (meaning that 15.8 % of babies died within a year of their birth) to 63 between 1970 and 1999;*
- *in the early 1950s some 27 % of the world's people lived in countries where life expectancy averaged less than 40 years; now only 0.2 % live in the two countries (Rwanda and Sierra Leone) where life expectancy remains that low;*
- *the share of the world's people living in countries where the average caloric intake is less than 2,200 calories per person a day (the accepted adequate daily level) has declined from 57 % to 7 %;*
- *in 1950 only 35 % of people aged 15 and over in developing countries were literate; this share has now more than doubled to 74 %;*
- *in 1950, 366 million people in the developing world could read; compared to 2.4 billion in 2000,*
- *between 1950 and 2000 the number of enrolled students in developing countries jumped from about 100 million to 1 billion;*
- *in 50 years, primary enrolment ratio for girls rose from 56 % to 95 %.*

Major Development Challenges

The people of the developing world still face major challenges:

- *there are 1.2 billion people who live on less than one US dollar a day;*
- *there are 36 countries where average per capital caloric intake is less than 2,200 calories, 24 of them in Africa;*
- *only half of the young people in age in developing countries attend high school;*
- *in South Asia, female secondary enrolments are only 65 % of male enrolment;*
- *in many African countries per capita incomes have declined since the 1970s;*
- *in seven southern African countries, more than 20 % of the population is infected with HIV/AIDS;*
- *HIV/AIDS is advancing rapidly in China, India, Indonesia and Russia.*

It is hoped that the Goldfinger and similar varieties can meet some of the needs of consumers in the tropics as well as in Europe and North America where billions of bananas are consumed each year. Research on building a better banana has a long way to go, but it would not be where it is today if it were not for international development assistance.

Since international development programs started, 50 years ago, "most of the world's people, including the poorest, have seen continual and substantial improvement in their basic living conditions", states a recent overview of foreign aid. "Developing countries are catching up with industrial countries – particularly in life expectancy, nutrition, and literacy. In infant mortality and secondary school enrolments, they have already reached or surpassed the levels achieved by industrial countries in the early 1950s, when the era of foreign aid began." International development assistance is the key to building a better world.

Any eventual success in coping with these major problems depends primarily on the people in developing countries. At the same time, we cannot ignore that they need our assistance to achieve success.

Jean-Marc Fleury is the Director of the Communications Division at the IDRC

The Science of Bananas

I can't remember the first time I tasted banana. I was too small. My son won't remember either he is only ten months old. How many generations do I have to go back before someone can describe to me their pleasure of discovering this extraordinary fruit, unpeeling its padded yellow jacket and sinking their teeth into its ample flesh? Well, actually, only one – my mother. But if I lived in Uganda, in East Africa, it would be quite impossible to say. In Uganda parents have been feeding their children banana for countless generations. But when Ugandans talk about banana, they are not talking about the supermarket banana. In North America, Europe and elsewhere in the industrialised world, consumers generally eat one type or variety of banana, the Cavendish. In Uganda they eat, cook, brew, using something in the region of 100 different varieties of banana. Take a banana tour around the tropics and you will find somewhere between 500 and 1,000 different banana varieties being grown, consumed and used.

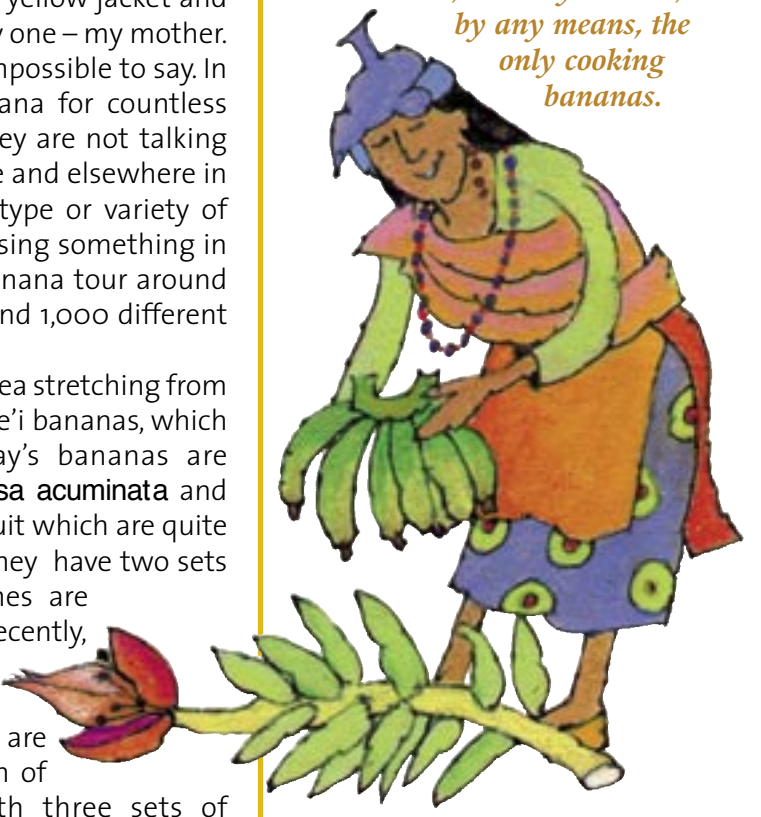
Domesticated bananas originate from Asia, from a large area stretching from India to Papua New Guinea. Barring a group of cultivars, fe'i bananas, which developed independently in the Pacific region, today's bananas are descended from one or both of two parent species, Musa acuminata and Musa balbisiana. The wild forms of the species produce fruit which are quite inedible and full of seeds. They are also diploid – that is they have two sets of chromosomes (the structures upon which the genes are found). However, in the course of evolution and, more recently, selection by farmers, beginning around 9,000 years ago according to current estimates, a range of banana forms have appeared that are sterile and bear edible fruit that are seedless. A particularly significant event in the evolution of the modern day banana, occurred when forms with three sets of chromosomes, triploids, were produced. More vigorous, with large seedless fruit, these varieties found favour with the early farmers, and spread far and wide. A descendent triploid is now the focus of the six billion dollar

The Banana's Other Name

"Musa is the name of the genus or group of around 30 species related to the banana. Domesticated bananas arose from M. acuminata*, and in some cases from a second parent M.* balbisiana*, too. Other Musa species are useful. M.* textilis*, known as abaca or Manila hemp is an important source of fibre that makes its way into tea bags and paper currency."*

Plantains

The name plantain is frequently used incorrectly. Plantains are a specific group of cultivars, divided into "horn"or "french" types, which are derived from both M. acuminata *and M.* balbisiana *parents. Their long green fruit are eaten cooked, but they are not, by any means, the only cooking bananas.*



The Multifaceted Banana Plant

In Uganda and other parts of the world, the crops used to feed the family are tended and managed by the women and children of the household. They are grown near the homestead and so are sometimes called as homegardens. Bananas are found in practically all Ugandan homegardens, up to 37 varieties in some places. They are grown for many reasons as well as for their nutritious fruit. Ugandan women know they are not supposed to throw any part of the plant away; the roots may be used as a fibrous thread to stitch crafts and wounded animals, the young bulb or corm is replanted, the corm water has medicinal use, the leaves are used to wrap the food as it is cooked, the stems and leaves are used as mulch or to feed livestock, unripe fruit may be cut into chips, dried and stored for use in times of famine, ripe fruit may be dried and ground into flour or squeezed into juice, the fruit peel are used to make a poultice for wounds.

international trade, the Cavendish.

The banana became one of the plant crops that accompanied roving or seafaring people in search of new colonisable lands. The trail is difficult to trace, particularly because there are few enduring parts to the banana that can remain in archaeological records. The domesticated banana has neither seeds nor woody tissue. It is not a tree, but a giant herb (the largest in the world). The trunk is a pseudostem, a huge tuft of leaf stems that grow upwards overlapping one another. The pinkish red flower shoots up from the middle and grows upwards until it falls over and droops to one side from the weight of the bud. Between nine and eighteen months after planting, the bud opens and the female flowers develop spontaneously or parthenocarpically (without being pollinated), into fruit.

The only way that the plant regenerates itself is through vegetative growths which originate from the underground stem (or corm) and shoot up from the base of the mother plant. These are called suckers. Once the plant has finished bearing fruit it will die and wither away. One of the suckers will take over and become a full grown plant, or, alternatively, the suckers can be cut and replanted elsewhere.

One of the most precious possessions of the people who wandered the globe in the early days of agriculture and many centuries afterwards were the seeds of crops which they would plant to allow them to live in new environments. In the case of bananas, it was not seeds but suckers which they carried. As humans moved and settled, the domesticated banana adapted to new conditions and, in some places, diversified into numerous unique cultivars, not just in Asia but further afield in the tropics of Africa and the Americas. In fact, the banana is one of the few major foods that has become established throughout the tropics and subtropics, and is appreciated the world over.

There is a part of this fleshy plant that does not decay: these are the siliceous particles which line the edge of the leaf (making up the so called “blade” on which you can cut your finger), known as phytoliths. Plantain type phytoliths, found encrusted on pottery from archaeological sites deep in the Cameroonian

rainforest, have been dated back to around 3,000 years ago. This presence of plantain, a plant exotic to Africa and, therefore, undoubtedly domesticated, is the first indication of organized agriculture in this region. In the humid forest climates of West Africa, plantain cultivars flourished and diversified. They still form a substantial part of the diet today. Plantain is also an important food in parts of India and Latin America.

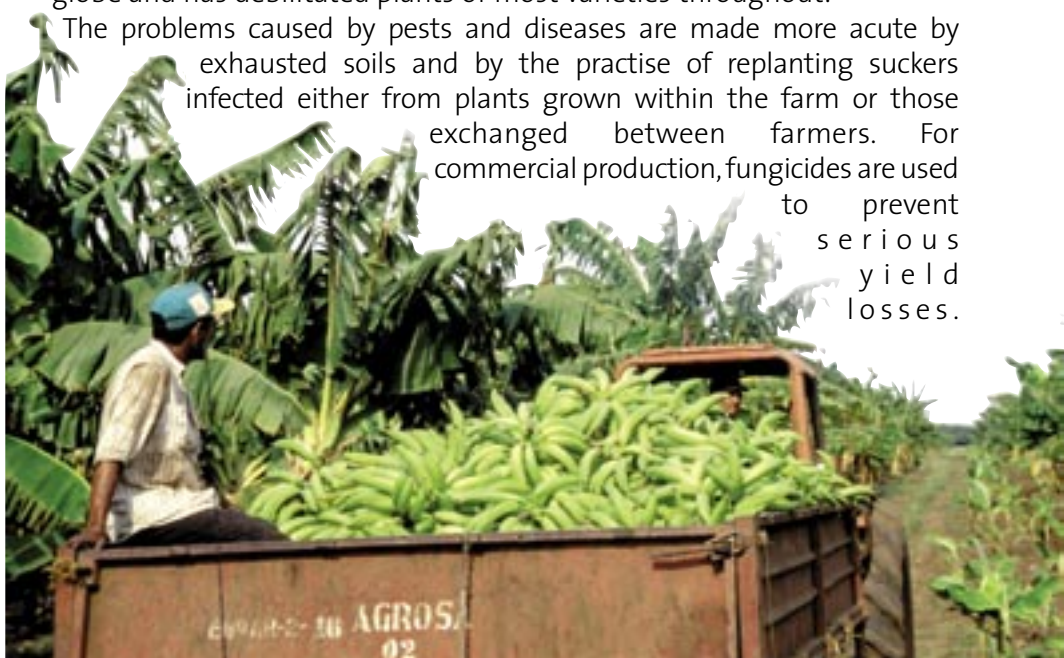
Although there is little evidence, a theory exists that people from Southeast Asia transported plantain to America before Christopher Columbus made his epic discovery of the continent. The historical evidence, however, points to an introduction in the sixteenth century when the plantain was probably carried on Spanish galleons from the Canary Islands, off the West African coast, to the Caribbean.

Some of the diversity in the crop is due to the fact that since ancient times, the banana has been used in many ways. Banana beer is a nutritious and culturally important brew enjoyed in large parts of East and Central Africa. The leaves and pseudostem are used ubiquitously as sources of fibre and rope, for thatching rooves, fabricating crafts, forage for animals or as plates or wrapping for food. The male flower bud is edible and various parts of the plant are used for medicinal purposes, some of which have even made their way into patented medicines. The fruit is one of the most easily digested foods available, and is particularly useful in feeding infants, the frail or ailing (and sportsmen in need of quick energy), providing a good source of potassium, calcium, phosphorus, vitamins A, B6 and C. But perhaps most importantly, the cooked banana is the daily staple of as many as 100 million Africans. As such, bananas mean food, income, security and life (literally in Uganda the word for food and for banana are one and the same, "matooke"). Visitors to banana-producing countries will find that the plant forms the backdrop to endless artistic endeavours, stories and cultural practices.

It should be no surprise, therefore, to learn that the export banana makes up only 13 % of global production. India alone produces more than the total number of bananas in world trade (16 million metric tonnes compared to around 12.5 million metric tonnes). In total 85 million metric tonnes are consumed in the 120 or so banana-producing countries. This almost exclusively represents the harvest of farmers working small plots of land for their living and subsistence. They farm without mechanization, without capital for investing in their farm or even for buying fertilizers or chemicals to combat pests or diseases.

Bananas are popular food crops in farms like this because they grow all year round and can produce fruit at any time, including times of hunger when the harvest from other crops is sparse. They are cheap to grow, and once the investment is made the annual growth of suckers supplies the farmer with next year's crop. Providing valuable shade, the banana is often mixed with annuals and other crops or livestock. Then there are the multiple purposes to the plant. However, like any other plant, the banana has a plethora of pests and diseases which have evolved uniquely to prey on the plant. Banana diseases are at their most diverse in the region from which the banana originated, Asia, but many have spread or arisen elsewhere. More than 200 insect pests are known to attack the banana; the most commonly cited is the borer weevil, a tiny beetle that tunnels through the underground stem, making the plant physically unstable. Parasitic worms, nematodes, burrow into the root system and reduce yield. Fusarium wilt is an essentially untreatable disease that is caused by a soil-borne fungus. In the 1960s, this disease was responsible for the demise of Gros Michel, a commercial banana variety which dominated the market before the reign of Cavendish. Viruses also attack the plant in many guises. The greatest problem at present, however, comes from a group of fungi which cause leaf spot diseases, in particular Black leaf streak disease. Once a plant is infected, the leaves become spotted and die. The decline in yields can be devastating, with losses of 50 % and, in rare cases, up to 80 % have been reported. Black leaf streak disease has spread rapidly in the last few decades around the globe and has debilitated plants of most varieties throughout.

The problems caused by pests and diseases are made more acute by exhausted soils and by the practise of replanting suckers infected either from plants grown within the farm or those exchanged between farmers. For commercial production, fungicides are used to prevent serious yield losses.

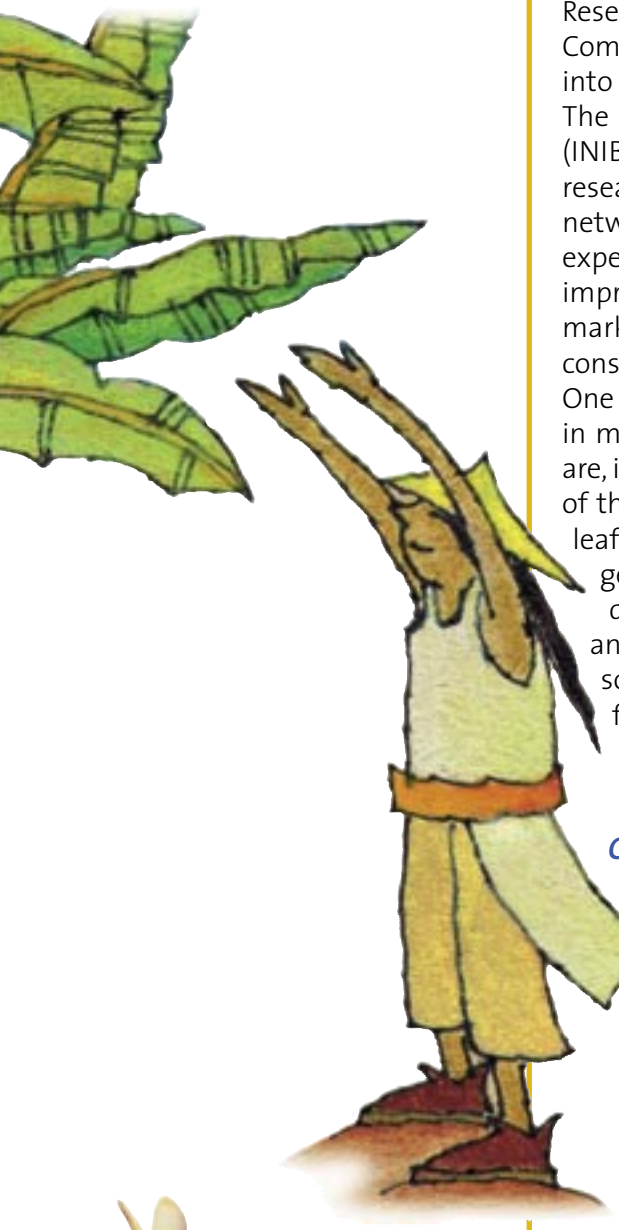


Keeping Black leaf streak disease in check within vast monocultural plantations, however, demands one of the most intensive spraying regimes currently in agricultural use. This not only drives up production costs by 25 %, but causes damage to workers and their environment. Where fungicides are not an option because of their expense, banana farmers have few means to combat the disease and are, at times, forced to abandon the crop.

The clearest solution to Black leaf streak disease and other diseases is to introduce genetic diversity and disease resistance into the crop. Other major staples, such as rice, wheat and maize, have been the focus of intensive research and breeding efforts. By contrast, 99.5 % of bananas eaten around the world come from the very same varieties that farmers have selected and grown for centuries. Whilst this says something about the rich diversity of bananas available, it is also a reflection of the fact that the banana is an intensely difficult subject for improvement. Firstly, most of the cultivars are sterile and have no seeds. Breeders cannot easily cross one cultivar with another. Secondly, cultivars have different numbers of chromosome sets, they may be diploid, triploid or even tetraploid. There are other confounding factors which complicate breeding, not to mention the time needed for a banana plant to reach adulthood and produce fruit. Despite sustained efforts since the beginning of the twentieth century it was only by the end of the century that the investments in research such as those made by Canada's IDRC paid off, and improved varieties of promising potential were made available.

No need to panic!

In the early months of 2003, the world press resounded with the news of the banana going extinct. The story originated from an UK science magazine called New Scientist, which related the threat of a new strain of Fusarium wilt, known as race 4. The disease has been identified in a number of countries in Asia and also in South Africa. Its spread is carefully monitored because there is no reliable treatment of the disease and many varieties of banana are susceptible, including those grown as a source of staple food as well as the Cavendish banana produced for export. There is no reason why new banana varieties with resistance to the disease can't be developed, but investment in research needs to increase significantly if scientists are to respond within a useful time scale.



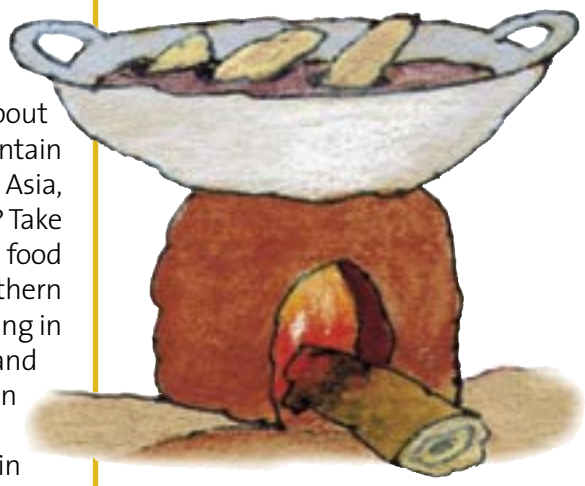
Research on the banana continues to be sidelined to a surprising extent. Commercial companies, for instance, put their money almost exclusively into streamlining processing and transport.

The International Network for the Improvement of Banana and Plantain (INIBAP) works with a large number of partner organizations to focus research and development on the smallholder crop. This is achieved through networking and bringing together researchers with the most developed expertise in banana pests, pest management, diseases, breeding, genetic improvement as well as other aspects of smallholder production and marketing. INIBAP has set up hundreds of collaborative projects in research, conservation and development.

One of the most ambitious projects involves the testing of improved varieties in multiple sites worldwide. Researchers and farmers in different countries are, in this way, introduced to new varieties and gain an intimate knowledge of their performance in local conditions, as well as their resistance to Black leaf streak disease, nematodes and Fusarium wilt. INIBAP also manages a genebank in Belgium, containing the large majority of the world's banana diversity. Improved varieties are made available free of charge to growers and researchers. This is not just an altruistic attempt to better the lives of some of the world's most resource poor farmers. Bananas in farmers' fields are the result of centuries of knowledge and care and banana farmers are the foundation upon which the future banana crops will develop.

Charlotte Lusty
is a specialist in Public Awareness and Impact Assessment at INIBAP

The International Banana



When you shop at your local supermarket, how often do you think about where the food you eat comes from or how it is grown? Supermarkets contain foods imported from all over the world, but how do things like rice from Asia, coffee from Africa and tropical fruits from Latin America get to our homes? Take bananas, for example. They are one of the best examples of a common food item that is available year round, but bananas are not grown in northern latitudes like Europe, the United States or Canada. Nevertheless, people living in these regions are among the world's largest consumers of the fruit and bananas are among the top five most important food commodities in world trade.

Billions of bananas make their way from the tropics to grocery stores in Europe and North America every year and the flow from the plantations is seldom interrupted. Although bananas are always good value, they are one of the most difficult fruits to bring to market because they do not like to wait around and they always travel first class. This is what makes bananas special. Unlike oranges or coconuts, bananas have to get from plantations in the tropics to the produce section of your local supermarket in a few short weeks or they will ripen on the way and not be marketable. The fickleness of bananas is why only a few very large companies are responsible for the vast majority of international market for the fruit. It's called vertical integration and it means that one company controls the production, transportation and distribution chain required to get perfect bananas to kitchen counters in Europe and North America.

The astounding profitability of the banana industry depends on the existence of a complex multinational infrastructure, and in some instances, the subordination of entire national economies. Bananas are grown in many parts of the world, but the majority (83 %) of the fruit that makes it to European and North American markets grow in Latin America. Latin American bananas are commonly referred to as the "dollar bananas" because of their cheap price relative to those exported from other banana producing nations. "Dollar bananas" are grown on enormous plantations where economies of scale bring down the cost of production. Smaller producers, like farmers from the islands of the Eastern Caribbean, cannot take advantage of the same savings as large producers with the result that their bananas are more expensive to produce. Large-scale production of bananas might be

Bananas are good for you

• Because bananas are high in Potassium, they can be eaten as part of a diet to reduce the risk of high blood pressure.

• Bananas contain more digestible carbohydrates than any other fruit. The advantage is, your body burns off calories from carbohydrates more quickly and easily than calories from protein or fat.

• Bananas are great for babies because they are one of the foods that is lowest in allergens: very few babies are allergic to bananas.

• Bananas are also easy to digest because they have no fat.

cheaper, but plantation agriculture requires the use of more fertilizers and pesticides than is used by smallholders.

The result is that large-scale banana production for export is more damaging to the environment. For example, statistics from the 1990s cited typical banana plantations in Central America as applying 30 kilograms of active pesticides per hectare per year (which is 10 times the average for intensive agriculture in industrialized countries), plus additional "inert" additives and solvents. Most of these chemicals, such as paraquat and DBCP, are highly toxic to humans and the environment. In Costa Rica's banana-growing region, for example, pesticide run-off into streams and rivers has been a major factor in fish kills, and it is suggested by some research that 90 % of the coral reefs off the country's Caribbean coast died as a result of the poisons that eventually reached the ocean.

The problems in the banana industry, however, are not only restricted to the environment. People working in this trade also have serious concerns. The pesticides, so dangerous to the environment and wildlife, also present real threats to human health. Those working the banana plantations need to wear protective clothing during spraying, but they are not always provided with the necessary gear or training, and many suffer from pesticide poisoning as a result. In addition to their jobs being hazardous, the many casual labourers are generally not paid high salaries and their low wages serve to subsidize the price of bananas in North America and Europe. To make matters worse, when the world market fluctuates or when disaster strikes a plantation region, the economy of the entire producing country is affected. The banana trade is not a stable trade in which to be involved, but plantation workers have little choice because there are few alternatives open to them.

In contrast to the large plantations of Central America, the Windward Islands of the Caribbean also produce bananas, but on a different scale and in a different way. In the Caribbean, bananas are primarily grown on small farms in hilly areas, usually owned and worked by local family farmers. When Geest, a European marketing and shipping company, began buying and sending more of their bananas to markets in Europe, many farmers took advantage of this ready market and diverted areas of trees, root crops, and vegetables to banana cultivation. Bananas became the main export industry on the islands and provided many with a relatively stable income. The Windward Islands developed into a major banana

Banana war casualty

How does the Banana War affect Women? A research study conducted by The Caribbean Association for Feminist Research and Action (CAFRA) demonstrated that living conditions in the Caribbean worsened because of national and household income losses connected to falling banana prices. The effects included: loss of access to food; health problems; land not being farmed; inability to meet loan commitments; unemployment; increased drug abuse; increased crime. The women questioned in the study knew little about the WTO, the International Monetary Fund (IMF), World Bank and international trade structures, but were aware of their own government's policies leading to social and economic problems. They were also aware of the impact the banana industry and trade policies have had on worsening the situation.

The result of the study was a call for governments and others to create jobs for those who had left the land and assist farmers in the improvement of agricultural techniques. Agricultural diversification requires both time and subsidies to produce favourable results in the long term. Loss of security through sudden change in market opportunities left women without resources to build a future for their families. The CAFRA argued that through these efforts, the situation in the Caribbean would improve and the effects of the decline of the banana sector would be lessened.

exporting region because of their historic relationship with Europe.

In the decades running up to the 1960s, countries like France and Britain relied on their overseas colonies to provide products from the tropics. The special relationship between European governments and their former colonies continued after colonialism ended and was formalized in 1975 with the signing of the Lomé Convention. Under the terms of the agreement, former European colonies in Africa, the Caribbean and the Pacific (ACP), were guaranteed duty-free access to the European market for a range of commodities and paid a higher price for their produce. The Lomé Convention began as an agreement between the European governments and 48 of the former European colonies in ACP. The group then expanded to 71 developing countries and, in 2000, the Lomé Convention was replaced by the Cotonou agreement. Both agreements offer wealthy European countries a means of contributing to the development of the poorer countries in ACP, but for some, the agreements were seen giving unfair advantage to one group of exporters. Europe is the main market for Caribbean bananas and represents 40 % of the international banana trade.

The government of the United States of America and several banana-producing Latin American countries, pressurized by multinational corporations like Chiquita, Delmonte and Dole, challenged the preferential trade provisions granted by the European Union to countries like Grenada, St. Vincent and the Grenadines, St. Lucia and Dominica which are part of the Windward Islands of the Caribbean. Bananas produced by multinational corporations on Central American plantations could only be sold in Europe at the price of Cotonou bananas. The multinationals liked the higher prices, but did not like sharing the market. Bananas produced on large plantations in Central America cost about half as much to produce as those grown in the Windward islands and the corporations knew that they could easily supply the entire European market with cheaper bananas. Therefore, the USA government took the issue to the World Trade Organization (WTO).

The WTO sided with the USA and banana exporting countries in Latin America, saying that the current system favoured European territories and former colonies in the Caribbean over multinational corporations like Chiquita and Dole. Countries in Latin America, like Costa Rica, Ecuador and Colombia benefited from the WTO decision because they produce the bananas that Chiquita and other multinationals sell on the world market. As a result of the ruling, from 2006 the European Union will no longer be able to pay a higher price to banana producers in ACP and must let the world market for the fruit dictate the price to consumers. Farmers in the Windward Islands will now be forced to compete in the global market where they are at a disadvantage.

Smallholder farmers like those of the Windward Islands do not

Banana as a food item

In North America, bananas are the most popular fruit and, on a per capita basis, people consume about 14 kilos per year. Ninety six percent of North American households purchase bananas at least once a month and in the average supermarket, banana sales represent 10 and 13 % of all sales in the produce department and one % of total sales. Imagine what percentage of total food purchases bananas would be in North America if, as in much of Asia, Africa and Latin America, they were a staple food and appeared in almost every meal.

have the resources to compete in an open market. A multinational corporation can rely on economies of scale in production, its monopoly on transportation from the plantation to the market, and control over distribution. In contrast, smallholder farmers are often stuck with steep and difficult terrain, and do not have the resources required to mechanize production or cover the costs of fertilizers or pesticides. When bananas produced by smallholder farmers for export are ready, transportation and marketing becomes an issue that is beyond the control of the producers. Banana production by smallholders in the ACP was only viable as long as the European Union was willing to offer price support. Now many farmers face ruin.

Increasingly, people are trying to create an alternative to this type of free trade. They are calling for fair trade, to ensure that the producers who actually grow bananas get a reasonable price. The concept of fair trade is based on guaranteeing independent small-scale farmers a fair price for their produce, enabling them to support their families and work in safe, healthy conditions. One organization that is trying to help is Oxfam, which, along with its partners in the Caribbean - the Windward Islands Farmers' Association (WINFA) and Caribbean Association for Feminist Research and Action (CAFRA) is attempting to turn disadvantage to advantage by creating a new market for bananas. Oxfam's Fair Fruit Initiative is only one effort to bring alternative bananas to market in Europe and North America. Fair trade bananas bear the mark of good plantation working conditions along with strict environmental standards. Under fair trade, producers are guaranteed a minimum price that is calculated to cover full production costs plus a reasonable margin to meet basic needs. Banana producers in the Windward Islands are taking advantage of fair trade, an effort first introduced in the 1960's with craft products. The most common agricultural products marketed under the fair trade label are coffee, cacao and sugar, because they keep well and are easy enough to bring to consumers. Bananas are much more difficult to bring to market, but it is not impossible if consumers are willing to pay a little bit more for them. Bananas carrying a "fair-trade" guarantee on the label are now available in supermarkets in ten European countries and are starting to appear in North America.

Fair trade bananas can be identified by their labels, which is the consumer's guarantee that the fruit has been produced to certain standards and that the producer gets a fair price plus a premium for investing in making social and environmental improvements. The body responsible for setting and monitoring these social and environmental standards is the Fairtrade Labelling Organisations International (FLO), which groups 17 national labelling initiatives.

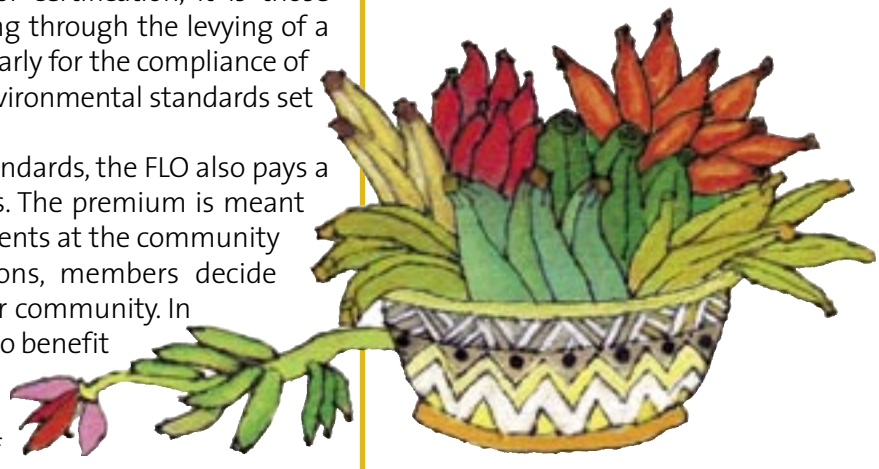
FLO certifies producers' organizations, both small farmers and plantations, and registers traders who want to market labelled bananas. The national labelling initiatives license companies who want to sell in the consumer

Vitamins and Minerals in a banana

- *Vitamin B, B1, B2 ,B6*
- *Vitamin C*
- *Vitamin A*
- *Folacin*
- *Thiamin*
- *Riboflavin*
- *Niacin*
- *Magnesium*
- *Copper*
- *Iron*
- *Phosphorus*
- *Potassium*
- *Zinc*

countries. Rather than charging the producers for certification, it is those licensed companies who pay the cost of monitoring through the levying of a licence fee. Certified producers are monitored regularly for the compliance of their working practices with the high social and environmental standards set by FLO.

Along with a fair price and high environmental standards, the FLO also pays a premium to organizations in developing countries. The premium is meant to be used for social and environmental improvements at the community level. In the case of small farmers' organizations, members decide democratically how to spend the premium in their community. In large FLO-certified plantations, the premium goes to benefit the workers who are encouraged to organize in independent trade unions. The criteria to be fulfilled for certification also include a range of other international labour standards and health and safety requirements. Organizations must also work to eliminate all forms of gender discrimination. Additionally, producers commit themselves to minimising chemical applications, protecting water, soil and wildlife, and reducing and/or composting waste.



In 1996 just 2,500 of the 10 million tonnes of bananas traded worldwide were being sold under fairer terms of trade. By 2001, the share of fair trade bananas on the European market was 25,000 tonnes and by 2003, seven years after their launch, over 30,000 tonnes of bananas are produced and sold under fairer terms of trade. Some markets are more advanced than others. For instance, fair trade bananas make up about 25 per cent of the Swiss banana market. Thanks to concerted action by consumers and an international alliance of trade unions, farmers' associations and non-

We eat a lot of bananas

• The average person eats 14 kilos of bananas a year. However, in parts of Uganda where banana is a staple food, people eat up to 450 kilos a year.

• 99.5% of banana-eaters in the world are eating varieties of banana that have been selected by farmers and haven't changed in centuries.

• If all the bananas imported into Canada in a year were placed end to end they would circle the earth 13 times.

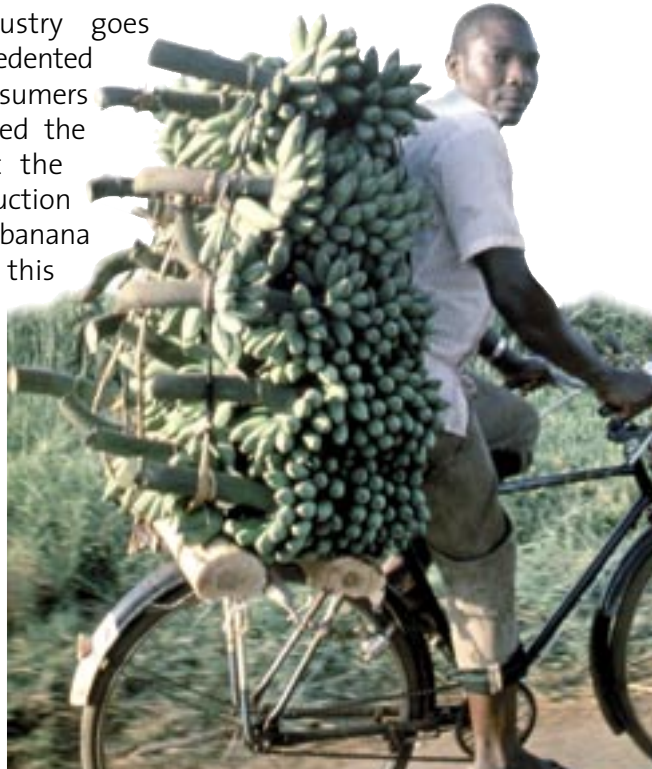
• If all the bananas grown in the world were placed end to end they would circle the earth 2000 times.

governmental organizations, bananas carrying a fairtrade guarantee on the label are turning up in stores everywhere.

Although Canada and the USA are not yet on par with the Europeans when it comes to fair trade, it is becoming easier to buy fairly traded products in North America. Proof of this is Oxfam Canada's Fair Fruit Initiative to make fairly traded bananas available in Vancouver, Toronto, Montréal and other major Canadian cities. Because bananas comprise 25 % of fruit sold in Canada, creating an equitable trade market can potentially have a huge impact on many small-scale farmers in developing countries.

The Windward Islands Farmers' Association has made a new market for bananas in the EU market by taking the fair trade challenge. The argument about the value of fair trade seems to be strong - among consumers, among large retailers like Sainsbury's, the Co-op and Tesco; among small farmers in the Windwards; and now even among banana grower associations and Windward government officials. WINFA is recognized as a central player in a timely and valuable effort to defend and develop the banana trade with Europe, which had been threatened by the WTO ruling on EU pricing policies.

At the beginning of the 21st century, the international trade in bananas faced one of its deepest crises in its 100- year-old history. The visions, principles and practices of fair trade are needed more than ever as this multi-billion dollar industry goes through rapid and unprecedented changes. Acting together, consumers and producers have challenged the industry to change to meet the demands of sustainable production and fair trade. Nobody in the banana industry today is unaware of this challenge, but much more remains to be done. This is why it is important for all of us to work together to support research and other initiatives aimed at securing a future for the banana and the people who depend on it.



Linda Ross
is the Canadian Programme Coordinator for Oxfam Canada