Future Funding for the Cassava Research Network in Asia

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CIAT's Contribution to Cassava Research in Asia

- Training of researchers, extension workers and key farmers
- Germplasm and breeding methodologies
- Basic research on various aspects of crop production and utilization
- New approaches
- Literature and documentation

Table 1. Number of researchers from Asia trained at CIAT/Colombia or with CIAT funding for thesis research, from 1975-2000.

	China	India	Indonesia	Japan	Laos	Malaysia	Philippine	Sri Lanka	Thailand	Vietnam
Production Short Courses										
Jan-Feb 1978		5	3			4	4		2	
June-July 1980			6			3	6	4	6	
Sept-Oct 1985	1		6			1	8	2	6	
Aug-Sept 1989		2	3		2		5	1	6	
Total Short Courses	1	7	18		2	8	23	7	20	
Special Courses	3	1	3	1		6	6	1	17	
Specialization		1					1			
No Thesis	2			1		1	1		3	
MSc Thesis							1		9	
PhD Thesis							1		1	
Total No. Persons Trained (153)	10	9	21	2	2	16	34	8	50	0

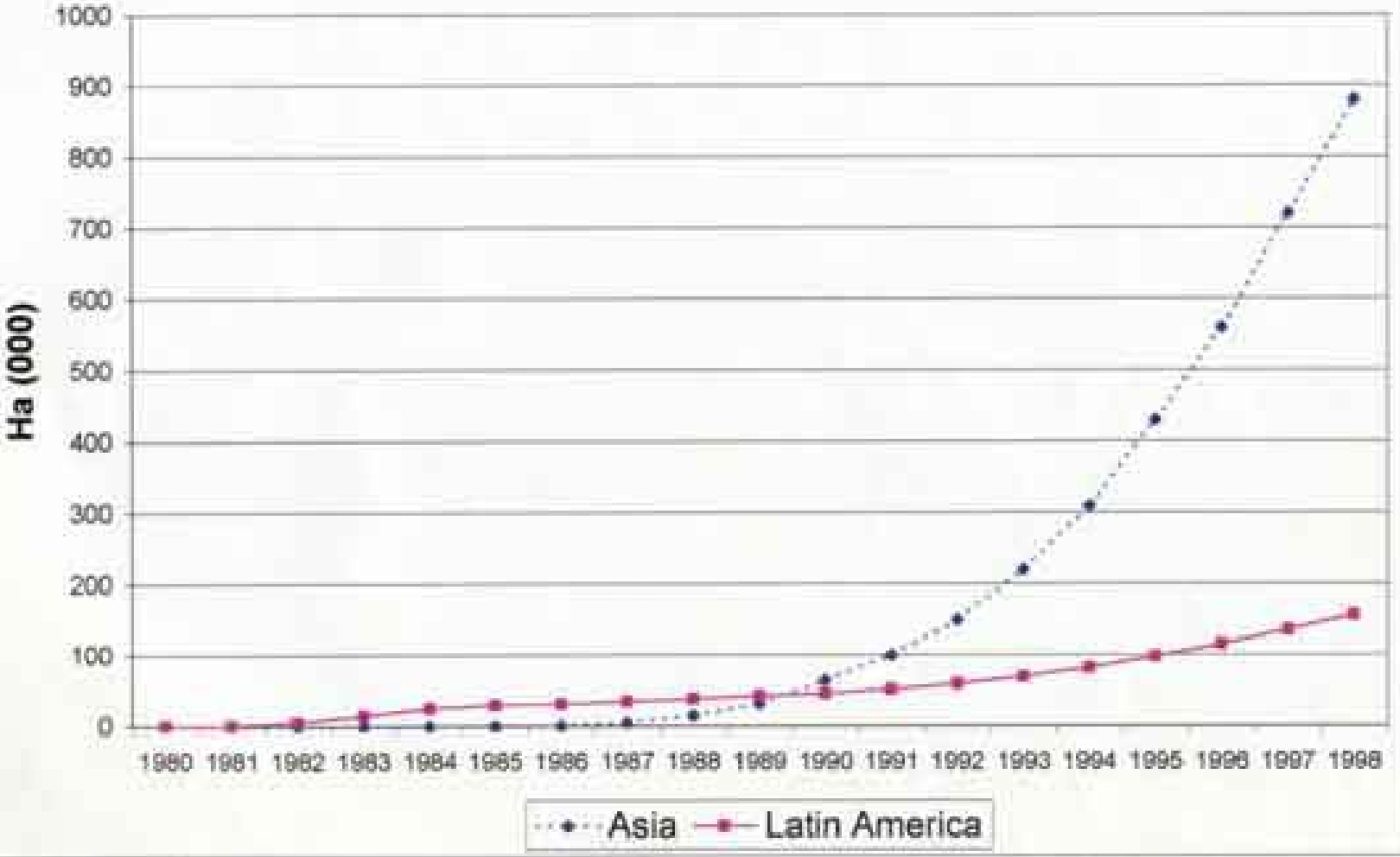
Broadening the Cassava Genetic Base

- Introduction of nearly half a million hybrid F1 seeds into Asia has greatly broadened the genetic base
- CIAT trained cassava breeders in tissue culture and has just completed the transfer of the cassava core collection of about 600 accessions to Thailand, and will soon send ICMD resistant elite clones to India
- CIAT will continue to send seed of crosses with drought resistance and with high starch content
- CIAT has submitted a regional proposal to strengthen biotechnology and the use of marker assisted selection

Cassava Improvement in Asia

- Asia had relatively few native lands races of cassava and breeding during the 1970 was not always very successful
- Since 1983, the introduction of hybrid F1 seed from CIAT and assistance from a CIAT cassava breeder resulted in the release of about 35 new varieties of high yield and starch content
- About 1.3 million ha, or nearly 40% of the cassava area in Asia, are now planted with these varieties
- The cumulative economic effect over the past ten years was estimated in 1997 at 693 million US dollars

Figure 1. Adoption of CIAT-related Cassava Varieties to 1998.



Cassava Agronomy

- A CIAT agronomist has been stationed in Asia since 1986
- National scientists conduct collaborative research on cultural practices, e.g. soil fertility maintenance and erosion control, cassava leaf production
- Recommendations have been developed on fertilizer rates, plant spacing, intercropping, minimum tillage and use of live barriers for erosion control
- The dissemination of improved practices is underway using farmer participatory extension methods

Farmer Participatory Research and Extension

- New varieties are being adopted rapidly, but improved cultural practices are adopted more slowly
- In 1994, RRAs were conducted and farmer participatory research trials of improved cultural practices were initiated
- Since 1999, farmer participatory extension methodologies have been developed to enhance the adoption of soil conserving practices
- This methodology has led to widespread adoption of new varieties and more sustainable cultural practices

Future Directions within CIAT

- Our goal remains a more sustainable, more productive agriculture for the tropics with emphasis on cassava, beans and tropical forages
- However, there are new scientific opportunities that will contribute to achieving this goal
- There are major advances in genetics, agro-ecology and informatics

Genomics

- The genomes of crop plants are being mapped revealing new insights into how plants grow and can be improved
- Molecular markers for desirable genes are being identified for useful traits such as nutritional quality, disease and pest resistance, stress tolerance, and productivity
- Use of these markers can rapidly speed up the selection of new plants with improved characteristics
- New ways are being developed for combining, moving and controlling genes and their expression
- This allows us to use existing biodiversity in crop and forage species and their close relatives and wild ancestors

Future CIAT research will contribute to:

Competitive Agriculture

- esp. for cassava, beans and tropical forages

Agro-ecosystem Health

- esp. soils, integrated pest management and land management

Social Capital for Rural Innovation

- through participatory research, community-based self-help groups and improved agro-enterprises

The Past, Present and Future

The Past:

- The CIAT cassava breeder in Asia was paid from core funding, while the agronomist was mostly paid from special project funding, mainly the Japanese government

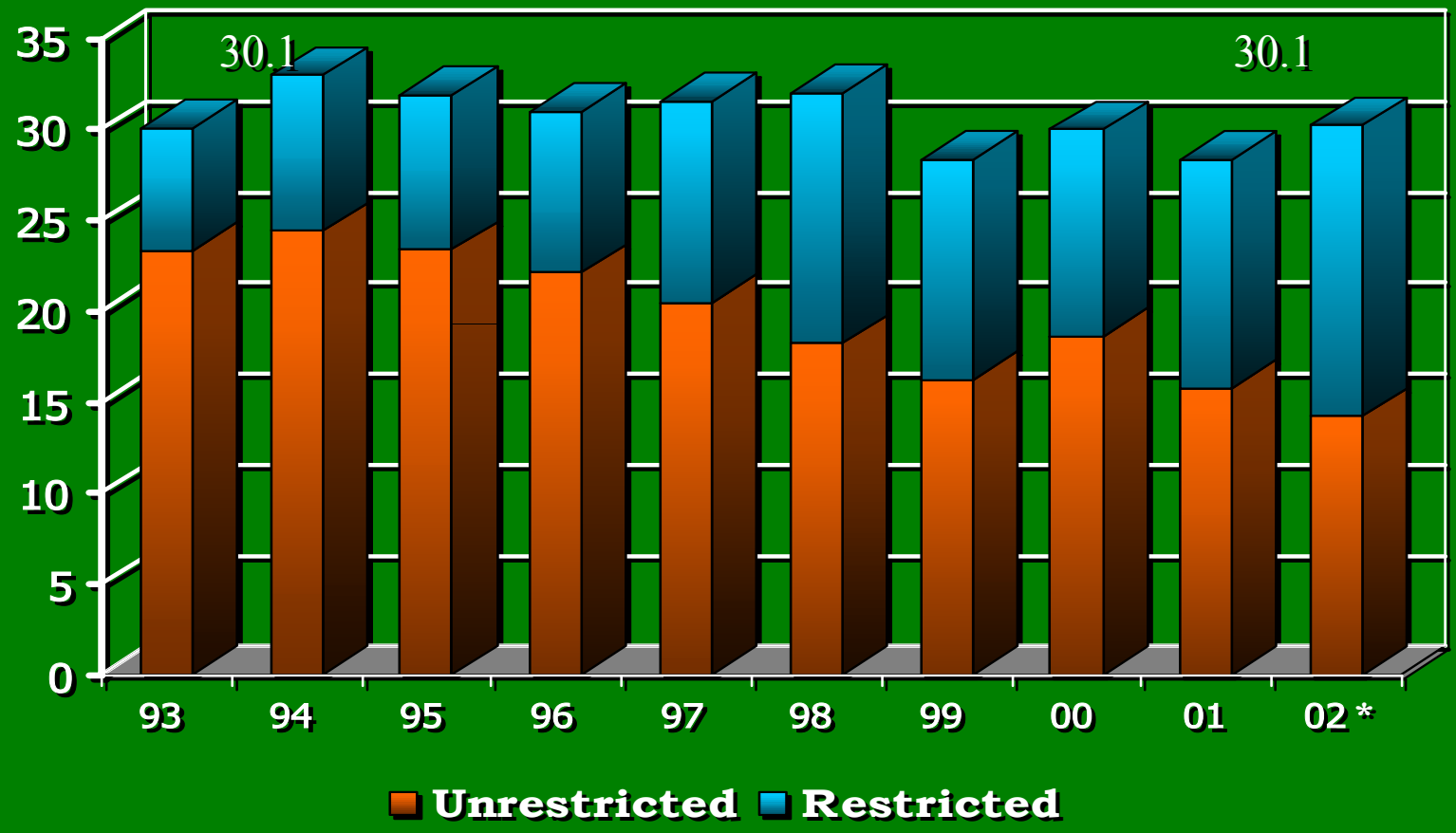
The Present:

- The cassava breeding position was moved to Colombia to strengthen cassava biotech research; the agronomy program has been funded by the Nippon Foundation since 1994

The Future:

- The Nippon Foundation funding for cassava will terminate at the end of 2003. After that……?

Total CIAT Income 1993-2002 (US$ million)



Expected Panel Discussion Outputs

- A shared vision about our research and development needs and a wish to develop alternatives
- Information about viable future options
- Information about current international strategic cassava developments
- Commitments from key actors to advance the idea (working groups, proposal, timing)

Traditional Players and Agenda

PLAYERS

- CIAT and other international project grants (donors)
- National programs and Universities
- Some collaboration with individual starch factories
- Other regional and international collaboration

AGENDA

- Regional R&D network
- Germplasm introductions and variety trials
- Agronomy trials
- R&D information and diffusion
- Training courses
- Regional workshops
- University degrees

Cassava Sector Evolution Since the 1990s

- Export of pellets have decreased and starch production and exports have increased
- Accelerated technology advances and uptake by the cassava starch industry to compete with maize
- Sharp increase in the number of starch factories in all Asian countries
- Many national cassava programs have improved and are now collaborating with the private sector
- Some countries with pro-cassava policies, but also with stricter environmental regulations

Shift in R&D Needs and Opportunities

- Improved varietal performance must be translated into concrete and major national yield increases
- More concern about negative environmental impacts (soil fertility and factory pollution)
- Asian countries have become starch competitors with implications for regional R&D sharing
- Cassava still needs more publicity
- Increased access to information resulting from the IT boom
- New biotech opportunities for cassava
- Private sector must carry more of the regional burden

Future Players and Agenda?

PLAYERS

- Starch factories and multinationals
- National policy makers
- Global Cassava Strategy partners
- Government/private sector alliances (such as TTDI)
- Traditional partners

AGENDA

- Forming a regional platform for cassava R&D related activities
- Demand-led and semi-commercial
- Partners pay in
- Property rights must be considered

Implications for Cassava in Asia

FORMULA

- Network with coordinator?
- Regional consortium for paying associates?
- Project?
- A virtual network?

ORGANIZATION

- With a formal link to CIAT?
- As part of a national program?
- As part of FAO?
- As part of the Intern. Root and Tuber Crops Society?
- Independent?

Proposal to set up a self-sustaining "Asian Cassava Research and Development Consortium" (ACRDC)

……with financial contributions from all interested cassava producing countries in Asia (both the government and private sector)

……with a contribution from CIAT core funding ($50,000?)

……with a possible contribution from ACIAR or other international funding agency ($50,000?)

……managed independently by an Executive Committee consisting of representatives from each member country

Proposed annual contributions from each country in Asia according to their level of cassava production

	Production (mil. tonnes)	Contribution (US$)
Thailand	18.58	45,000
Indonesia	15.42	40,000
India	6.00	25,000
China	3.75	20,000
Vietnam	1.81	15,000
Philippines	1.79	15,000
Malaysia	0.40	5,000
Sri Lanka	0.26	5,000
Myanmar	0.40	5,000
Laos	0.07	5,000
Cambodia	0.07	5,000
		185,000