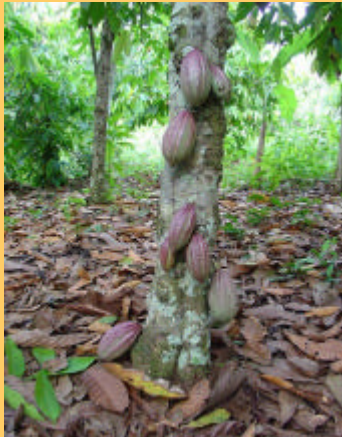


The Cacao Tree: An Opportunity for a Really Green Revolution

“The Oslo Conference for a
Green Revolution in Africa”



Howard-Yana Shapiro, PhD

Director of Plant Science
& External Research

Mars, Incorporated

31 August 2006 Oslo



What Do Farmers Need to Expand Their Options for Cacao Production

Intensification and diversification of chosen crops

- fewer cocoa trees/units per hectare with higher (100%+) output per tree/unit
- better agronomic practices, loss reduction and crop protection
- deliberate choice of crop combinations: spatial, temporal

Replace Ageing trees

- high yielding, drought tolerant, disease resistant germplasm choices

Rebuild Ageing of soils

- fertilisation and use of agro-chemicals
- lack of soil structure and water holding ability

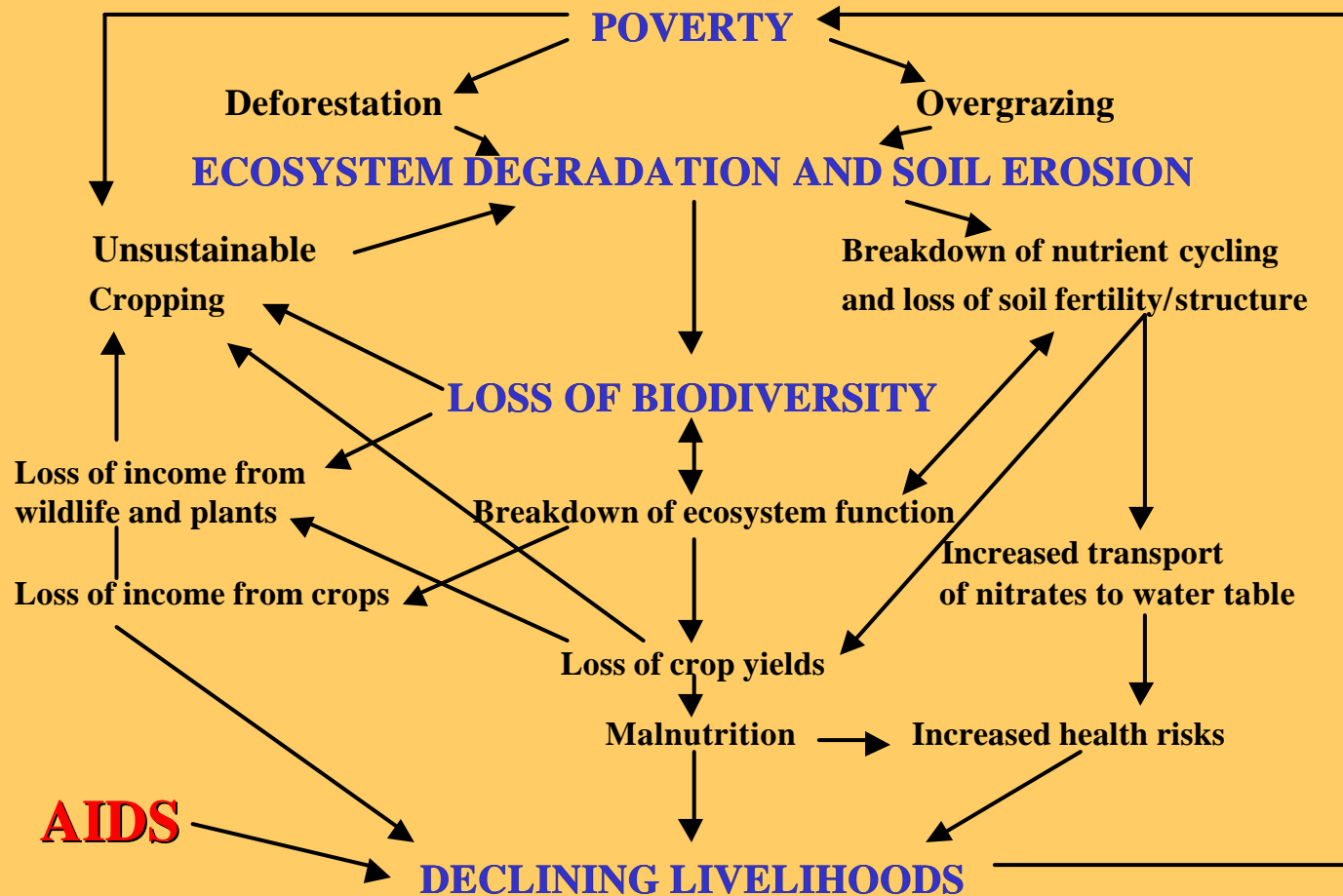
Portfolio of companion trees: assembling the components together into viable economic systems

Environmental Issues: the landscape effects, watershed management, biodiversity, climate change

Creating a business environment: farming as a business, farm service industry, credit & financing systems

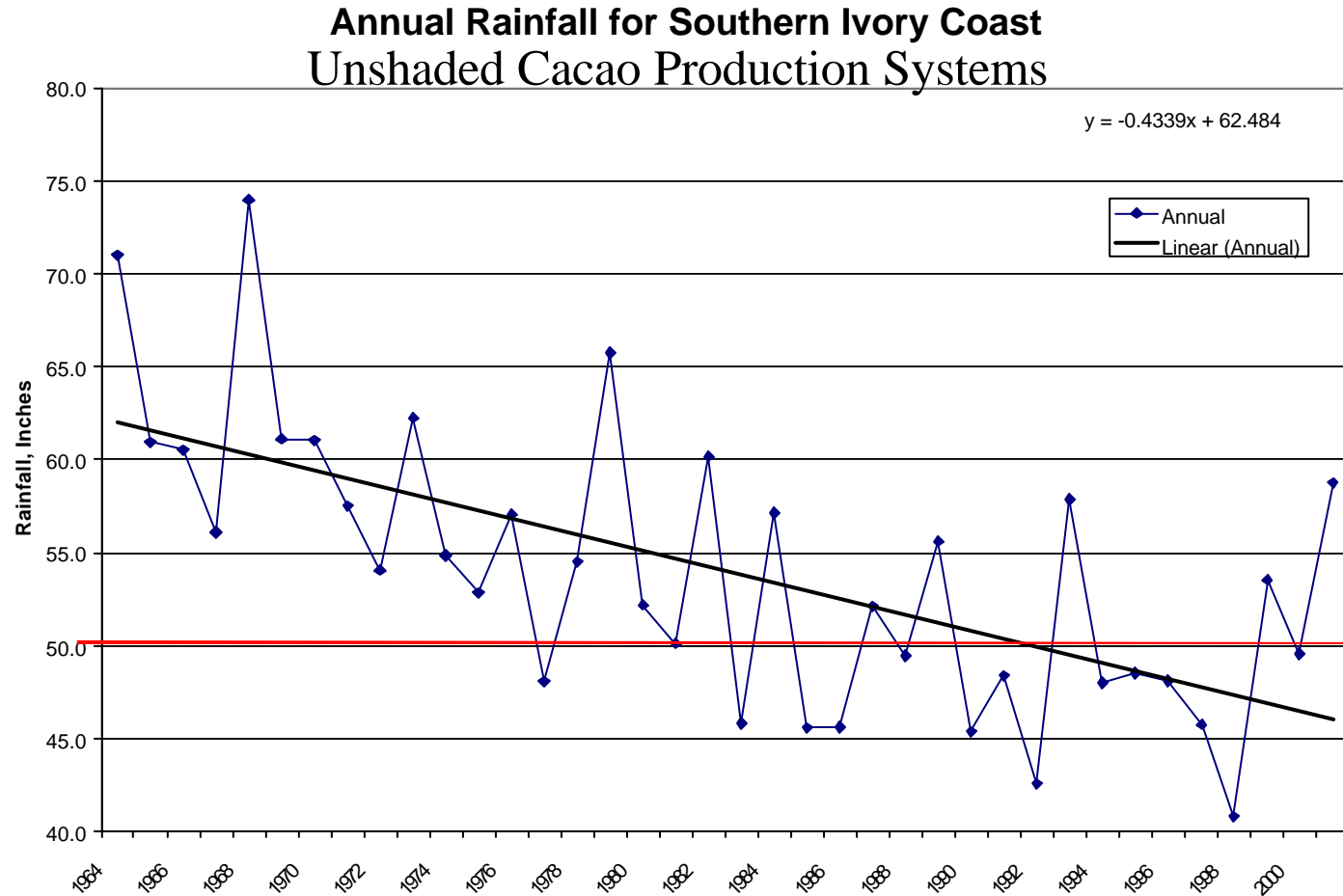
Infrastructure improvements: the innovation pipeline building capacity in research & development and extension services in country

End the Agroecosystem Degradation Cycle



Recognize Climate Change: Ivory Coast

Rainfall (1964 – 2002)



Calculate the Potential Nutrient Mining/Transport From the Soil of with the Production of One Tonne of Beans

Total export from the cocoa field	Nutrient removal in crop of 1 t/ha cocoa dry beans (7 % moisture) with 1.4 t/ha husks				
	N	P ₂ O ₅	K ₂ O	MgO	CaO
Beans	21,1	8,6	11,1	4,0	1,1
Pod husks	14,0	4,2	68,0	6,5	6,6
kg per cocoa tonne	35,1	12,8	79,1	10,5	7,7
	145,1				

HUSKS: often remain outside the cocoa field for sanitary reasons (Black Pod disease)

BEANS: These nutrients leave the farm, leave the village and most of them leave the country

Create Options for a Household Tree Enterprise Portfolio

Fertilizer tree systems: for food security on the farm

**Fruit and nut tree gardens: that provide for year-round
mother and child nutritional security**

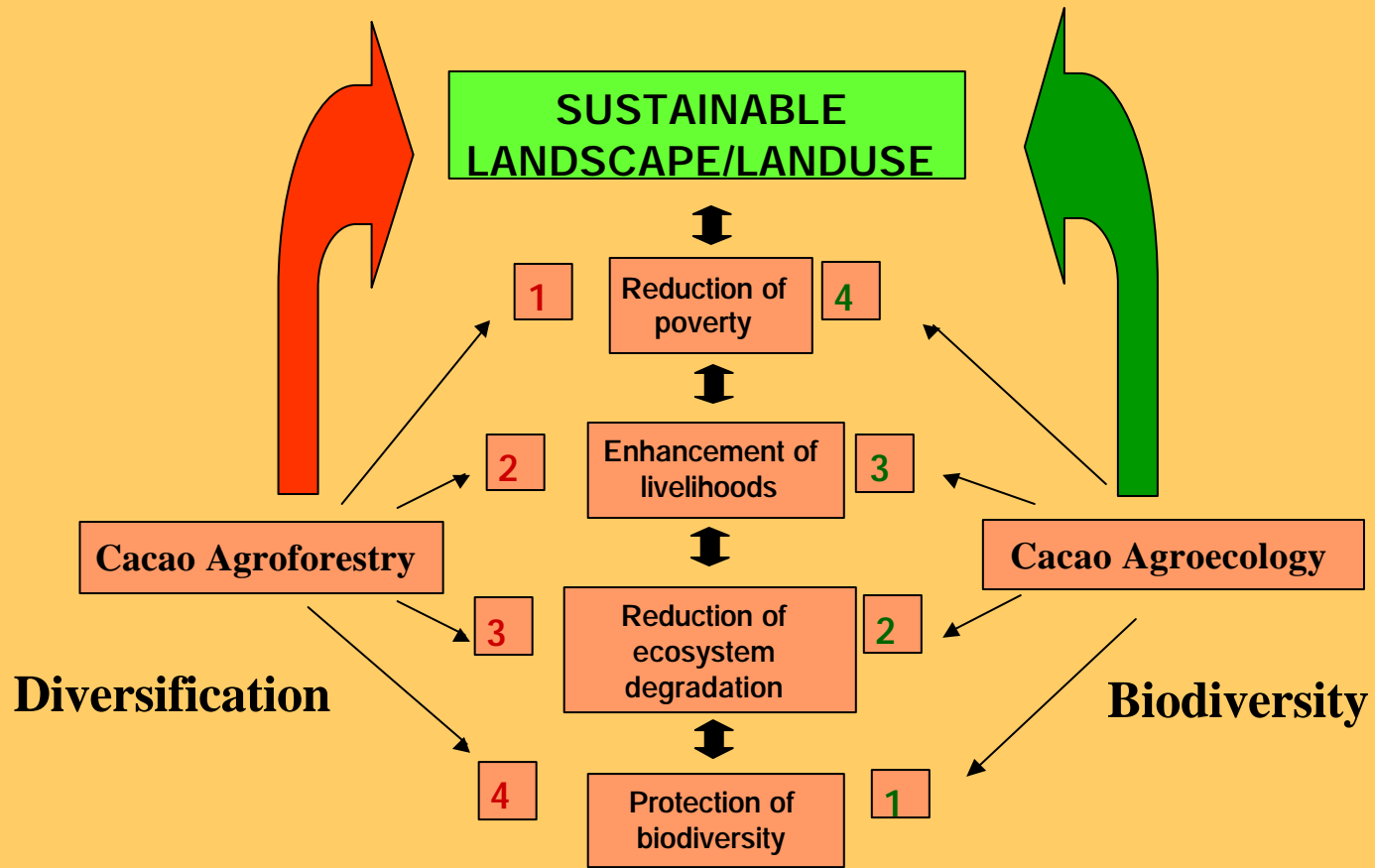
Medicinal tree gardens: to help enable family health security

**Fodder/coppicing tree gardens: for healthy and productive
livestock year-round**

**Wood tree gardens: for improved shelter and fuelwood
supplies, and**

Commercial tree enterprises: for cash income

Understand the Relationship Between Cacao Agroforestry and Agroecology vis à vis the Development of Sustainable Landuse Systems



KUMASI COCOA QUORUM -

Theobroma Cacao: The Tree of Change

Excited by the potential to improve cocoa agroforestry systems;

Aware of the global under-investment in cocoa development, and the links between productivity, biodiversity and diversification; and

Concerned by the unnecessary destruction of natural forest for cocoa cultivation, and the dwindling returns to small-scale cocoa farmers;

We, the 40 participants from 8 countries attending the CSIR -FORIG/Mars, Incorporated sponsored Cocoa Biodiversity Workshop (14th -18th of August 2006), recommend the following actions in representing our views of national cocoa agencies, national research institutions, international research organizations, NGOs, plant researchers and, the private sector. The Quorum resolve to progress the following with respect to more sustainable cocoa systems, and call on others to endorse and participate in a comprehensive and integrated approach to cocoa development in West Africa. Specifically, to **support the goals to intensify, diversify and make more biodiverse cocoa agroforestry systems and their associated landscapes**, we seek change with respect to:

Policy, Regulation and Natural Resource Management

- to mainstream cocoa production into land-use planning and policy
- to halt destruction of forests for cocoa production
- to ensure a supportive policy environment exists for sustainable cocoa and companion industries
- to maximize the community/household use and storage of water resources
- to promote ways to cope with changes in existing rainfall patterns

Cultivation Practices

- to provide demand-driven science to address farmers and other stakeholders problems
- to grow fewer cocoa trees with higher per tree productivity and profitability
- to free up existing agricultural land under unproductive cocoa for other enterprises and conservation
- to reinforce cultivation practices that are not detrimental to natural habitats and their biota
- to support profitable small-scale input enterprises, including tree nurseries
- to provide better access to improved germplasm for both cacao and companion species
- to increase soil fertility and reduce soil mining

Incentives, Investment and Institutions

- to harmonize efforts through horizontal and vertical integration of stakeholders activities
- to exploit avenues for payments for environmental services
- to test incentive payments for biodiverse companion planting
- to strengthen the market chain for complementary enterprises

The Kumasi Cocoa Quorum recognizes the need for improvements in the legislation concerning natural resources, especially the ownership of land and trees. We call for action to establish procedures to establish farmers' ownership over planted and naturally regenerated trees on their farms as an essential incentive for increasing tree cover in cocoa farming landscapes.

Change demands clear logic and planning to build the future for the cocoa farmers in West Africa. Importantly it needs recognition at the level of Millennium Development Goals, CAADP, and National Poverty Reduction Strategies. All stakeholders will need to participate in the decisions to determine the best paths for the future. **No single sector can be expected to bear the sole responsibility or burden for change - it must be a collective effort.** The knowledge and experience to move forward and achieve targeted growth are within our reach. We, the Kumasi Cocoa Quorum state emphatically that current cocoa farming systems cannot be as productive in the future decades without planned, agreed and concerted efforts of all sectors. Therefore, it is imperative that we collectively act now to foster the appropriate changes for the future. Cocoa has been and will continue to be the lifeblood of millions of West African farmers. We cannot abandon their future!

QUORUM constituent institutions:

ASNAPP, CERGIS, CI, CRIG, CSIR, FLD, FORIG, ICRAF, KNUST, Mars Incorporated, MOFA, Samartex, SNV, STCP-IITA

