



Agricultural Biodiversity for better Nutrition and Health in West Africa.

Global Imperatives and Opportunities

Emile Frison

Director General

Bioversity International

Ouagadougou September 2007



Millennium Goal 1

- **To eradicate extreme poverty and hunger**

Two targets are to halve between 1990 and 2015

- The proportion of people whose income is less than \$1 a day
- The proportion of people who suffer from hunger





Millennium Goal 1 Assessment of Progress (1)

- Generally, focus has always been on the income poverty target
- Most countries are on track to meet it





Millennium Goal 1

Assessment of Progress (2)

- Of 143 countries, only 34 (24%) on track to achieve the hunger target (including Benin and the Gambia)
- Nutritional Status has actually been deteriorating in Niger, Burkina Faso, Guinea, Mali, Senegal and Togo
- Reflected in Chennai Platform for Action (April 2005)





2006

Nutrition comes to the Fore

Preventing Chronic Diseases: A Vital Investment. (WHO, 2006)

The Standing Committee on Nutrition of the UN System (SCN) in *Tackling the Double Burden of Malnutrition: a Global Agenda* (SCN News #33, 2006)

Convention on Biological Diversity in the 8th Conference of the Parties *Cross-cutting Initiative on Biodiversity for Food and Nutrition* (CBD/COP8, 2006)

Nutrition Stakeholder Consultation Bioversity, 2006

And...



World Bank Report 2006
***Repositioning Nutrition as Central to
Development: A Strategy for Large Scale Action***

estimates lost national income due to diet-related chronic diseases (heart disease, stroke and diabetes) over the next ten years for key developing countries

E. g. \$7.6 billion for Nigeria

Investing in Nutrition saves billions in health costs, improves productivity, reduces poverty, improves education.

How can we shape that investment and link it to development?



A Growing Consensus in all Sectors

Agricultural biodiversity can improve nutrition and health through diverse diets, based on traditional and locally adapted species

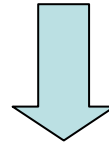
Need for many disciplines, many approaches

Challenge: link food security, good nutrition, health, long term sustainability and agricultural policy and practices

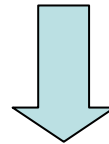


Why Agricultural Biodiversity?

Loss of agricultural biodiversity leads to loss of options for diets



Loss of options for diets leads to loss of dietary diversity



Loss of dietary diversity contributes to dietary simplification and the “nutrition transition” associated with non-communicable diseases and with the double burden of malnutrition

Double burden of malnutrition:

- Hidden hunger: missing micronutrients
 - At least 2 billion worldwide
 - Mostly women and children
- Diseases of “affluence”
 - Type2 diabetes, obesity, heart disease, cancers



Dietary Simplification (1)



- Energy from Fats and Oils Senegal
 - 1963: 8%
 - 1998: 20%
- Cheapest food: energy-rich but nutrient-poor



Dietary Simplification (2)



- Reduced access to traditional and indigenous foods
 - Focus on major staples
 - “Backward”
- Affecting poorest people most





Benefits of Diversity

Prospective cohort study in USA with 42,254 women:

- Number of different foods eaten is inversely correlated with mortality and chronic diseases
- Diversity is also positively correlated with longevity





Diversity of Diet Kenya

Involving 154 infants 12-36 months:

- Dietary diversity strongly and consistently correlated with anthropometric status.
- Inclusion of a variety of foods in the diets of children in the 1-3 year age group is very important





Diversity of Diet Mali

Including 77 children, 13-58 months:

- Food Variety (no. of food items) and Dietary diversity (no. of food groups) positively correlated with nutritional adequacy
- 15 items or 5 groups minimum for adequate nutrition





Promoting Diversity of Diet

- Diverse diet protects
- Indigenous varieties offer nutritional advantages
- Promote local agricultural biodiversity for improved diets and health



Kenya

Partnered with Family Concern (NGO) and Uchumi Supermarkets

- Traditional leafy vegetables
- Seed supply and agronomy
- Training for cleaner, high-quality produce
- Leaflets to educate shoppers
- Sales increase 1100% in two years



Evidence nutrition

- Millet significantly lower glycaemic index
- Amaranth grain reduces glycaemic index and has higher minerals and vitamins
- African leafy vegetables more nutritious than “exotics”



African leafy vegetables (1)

Per 100 gm	Amaranth (leaf)	Cleome	Nightshade	Cabbage
Iron mg	8.9	6.0	1.0	0.7
Calcium mg	410	288	442	47
β carotene μ g	5716	10452	3660	100





Diversity in Nutrient Quality within Crops

- What about differences between varieties?
 - Rice: Iron x 9; Zinc x 7; Thiamine x 15; Niacin x 5; Riboflavin x 36
 - Pumpkin: some varieties contain almost no carotenes, others up to 100 mg/gm





Benefits of a Traditional and Diverse Diet

- Based on better use of local diversity
- Building on people's own culture and resources
- More cost-effective
- Prevention better than cure
- Other interventions are more effective: vaccinations, food supplementation, etc.



Policy Challenge

- There is a cheap, available, local resource but it is often not fully exploited because Health Policy and Agricultural Policy generally operate independently.





Opportunities

- Traditional models still prevalent
- Policy makers have an opportunity to tap the potential contributions of agricultural biodiversity to improve nutrition
- Increased collaboration between Agriculture and Health



Conclusion

West Africa has a head start.

Agricultural Biodiversity is available and still used in food systems

But

It must be protected, enhanced and made an integral part of nutrition, health and development strategies



A young child with dark skin and short hair, wearing a bright red sweater with black and white stripes on the sleeves, is the central focus. The child is looking slightly to the right with a gentle smile and is holding a silver fork with a small piece of green broccoli. They are seated at a table with white plates of food, including what appears to be a large piece of bread or a vegetable. In the background, two other children are seated at the same table, their faces blurred. The setting is a bright, indoor dining area.

Thank you