
FEEDING THE WORLD CONFERENCE
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Are GM crops fit for purpose?
If not, then what?
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GM FREEZE
the campaign on GM food, crops and patents
Slow Food UK
PRACTICAL ACTION

EXAMPLES OF SUCCESSFUL AGROECOLOGY

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celebrating 50 years of organic growing

Agro-Ecological Solutions and the Case of Drought Resistance

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INDUSTRIAL VERSUS ECOLOGICAL PARADIGMS

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Industrial

- Focus on individual farm components
- Intensive use of external inputs
- Monocultures
- Simple uniformity
- Yield maximisation over the short term

Ecological

- Focus on whole farm system
- Knowledge intensive, on-farm synergies
- Polycultures, agro-biodiversity
- Location-specific complexity
- Yield optimisation over the long term

GM VERSUS ECOLOGICAL 'SOLUTIONS'

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GM Solutions	Ecological Solutions
Herbicide resistance	Ground cover, mulches, soil fertility management, rotations, mechanical weeding, varietal choice (vigour/habit), transplants, stale seed beds, canopy cover, 'weed' crops as food/predator attractants
Pest and disease resistance	Variety/crop/farm diversity, buffer zones, predator attractants/ antagonists, biological controls, rotations, mechanical covers (fleece/mesh), forecasting/ monitoring - timing, mixed cropping, varietal selection/breeding, grafting, module planting
Improved nutrition	Biodiversity, varietal selection/breeding, soil nutrient management, efficient irrigation (higher dry matter)

ECOLOGICAL EXAMPLES: VITAMIN A DEFICIENCY

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'Golden Rice' fortified with beta-carotene

- Increased intake of beta-carotene (RDA 144g rice)

Beta-carotene rich 'weeds' in traditional rice fields

- Increased intake of beta-carotene (RDA 100g green leaves)
- Free
- Increased nutritional & biological diversity

ECOLOGICAL EXAMPLES:
CONTROL OF MAIZE PESTS AND WEEDS

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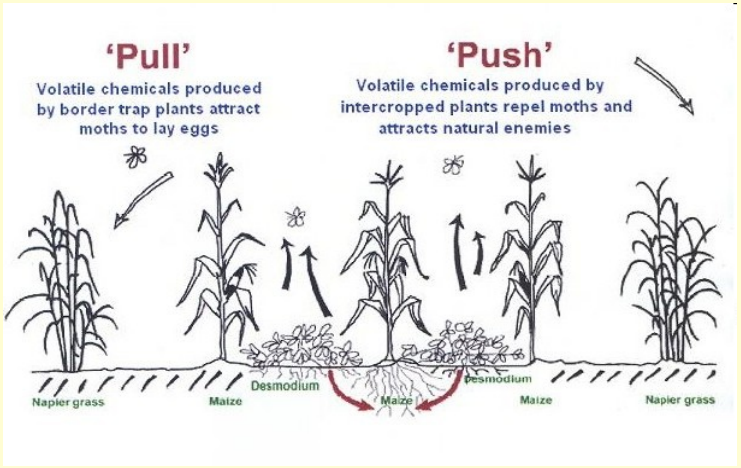
Herbicide resistant maize and Bt maize

- Controls maize stem borer
- Controls certain weeds

"Push-Pull" Strategy



- Controls Striga weed
- Controls maize stem borer
- Improves soil fertility
- Improves water retention
- Produces livestock fodder
- Encourages maize diversity

TACKLING 'PROBLEMS' THE ECOLOGICAL WAY: THE CASE OF DROUGHT RESISTANCE

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The Challenge in Cuba

Climate Change	+ Intensive Agriculture	+ Lack of Finances/Fuel	= Successive Harvest Failures
Temp rise 0.5^0 Drought 2002-06	60% soils eroded 40% low water retention 45% low fertility	For irrigation systems	In Holguin Province, 1 year: •3,000 wells dried up •2,000 livestock deaths •400,000 litres milk lost •Maize not sown

The 'Solution' Participatory Development of Rainwater Harvesting and Conservation Strategies

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INCA
INSTITUTO NACIONAL DE CIENCIAS AGRÍCOLAS
San José de las Lajas, La Habana, Cuba

Year 1:
1 Province, 2 communities, £15,000

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Actions:

- Increase farmer knowledge on water cycles, salinisation and water management
- Experiments with drought-tolerant varieties, rainwater capture, soil improvement and cover crops

Year 1

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Results:

- Increased farmer capacity to experiment and work together
- Increased crop diversity
- Livestock corralled for manure collection
- Uptake of wormeries and biofertilisers
- Improved soil-water retention capacity
- New local vegetable market
- New local seed market
- Increased family income and nutritional availability

Year 1

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“A year ago, drought was a worry to us, but now we don’t list this as so important”

Farmer, Las Caobas, Holguin

Year 2:
Increasing Ecological Literacy

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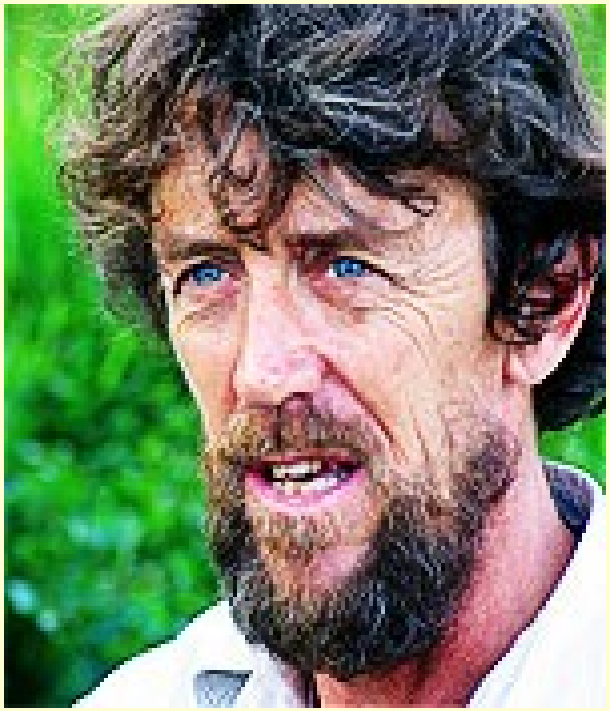
“Greening the desert?”

Geoff Lawton, Permaculture Research Institute, Australia



Year 2: Drought-Proofing Farms

4 provinces, 20 communities, £20,000

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WHICH WOULD YOU CHOOSE?

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Drought-tolerant maize (Budget $47 million)

- Increase in maize yields/decrease in water requirements

Drought-proofed farms

- Increase in total farm yields
- Drought no longer a problem
- Soil fertility/biodiversity improved
- Water available for household/ livestock

More resources
available at the website
www.feedingtheworldconference.org