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UNEP Meeting on Integrated Assessment of Trade-Related Policies and Biological Diversity in the Agricultural Sector

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The EC – ACP project

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The EU's current position

- ✘ ACP share of EU market fell from 6.7% (1976) to 3% (1998).
- ✘ Just 10 products accounted for 60% of ACP exports to EU.
- ✘ Per capita GDP in sub-Saharan countries with preferences grew by just 0.4% per annum from 1960 - 1992, compared with 2.3% for developing countries as a whole.

EU 1997 green paper

“Trade preferences have neither halted the increasing marginalization of the ACP region in world trade nor in their trade with the EU. Nor have they overcome the high dependence of the ACP on a few commodities.”

Economic Partnership Agreements. European Commission 2002 (DG Trade, DG Development).



Changing goals (1)

- **Old goal:** increase ACP exports to EU.
- **Problem:** neglected international markets.
- **New goal:** 'to foster the smooth and gradual integration of the ACP States into the world economy'. (Cotonou Agreement).



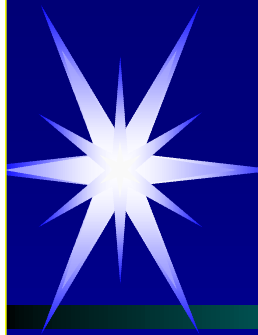
Changing goals (2)

- **Old goal:** use trade preferences to give competitive advantage to favoured countries.
- **Problem:** preferences have no impact if the country is not in a position to utilize them.
- **New goal:** 'to enhance the production, supply and trading capacity of the ACP countries as well as their capacity to attract investment' (Cotonou Agreement).



Changing visions

- **Old vision:** Trade cooperation has been ‘largely perceived as an end in itself, aiming simply at increasing the flow of ACP exports to the EU’.
- **New vision:** Trade cooperation is ‘a means to promote the sustainable development of the ACP countries and to contribute to poverty eradication in these countries. As a consequence, economic and trade co-operation must be designed as a tool for development’.



The EU criteria

The strategy must:

- ✓ Generate rural employment, reduce poverty.
- ✓ Result in clear developmental gains.
- ✓ Focus on international export markets.
- ✓ Not depend on preferences.

Question: how to fit biodiversity into this agenda?

Traditional approach: conservationist; emphasize ecosystem services, unrecognized value etc.

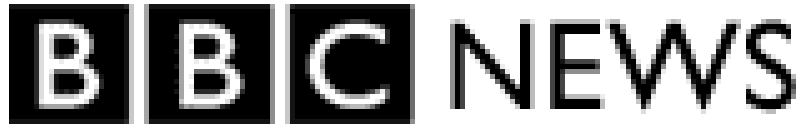
Additional strategy: role of technology in transforming land use, realizing economic value of genetic resources.



New industrial crops

- Mercedes already manufacture back walls, pillars and door panels from jute fibres bound by polypropylene, headrests and seat backs from coconut fibres bound by rubber, interior panels from sisal, jute & cotton, rear shelves and insulating mats from shredded cotton, upholstery from coconut fibres & latex, interior door panels from flax-sisal mats covered in epoxy resin, and brake hose out of polyamide 11 (manufactured from castor oil).
- The vision now is to make cars from eco-composites; parts made from natural fibres in a matrix derived from plant starches or resins. Some natural fibres (such as Ramie, an Asian nettle) have tensile strengths that exceed that of steel cable, while remaining flexible (Ramie is currently used to make parachutes and bank notes). The University of Delaware has developed a process to replace existing petrochemical-based polyester, epoxy and vinyl ester resins and composites with resins and composites manufactured from soya or corn oil; these give equivalent strength for about 25% of the weight. It may be possible to produce even structural engineering components entirely from eco-composites.
- These eco-composites offer completely new prospects for agriculture, especially in tropical regions, as fibres, oils and resins become next-generation industrial crops.

Future driver: increasing health-related concerns about diet



14/05/2006

About 40% of all deaths in the UK are from cardiovascular disease. This costs the UK economy £29bn a year in healthcare expenditure and lost productivity. Healthcare accounted for £17.5bn (60% of the total); of which hospital in-patient care cost £10bn and drugs cost £3bn. Lost productivity made up 23%; over 69 million work days were lost to heart disease in 2004, at a cost to the UK economy of some £3bn, informal care represented 17%.

Prof Peter Weissberg, medical director at the British Heart Foundation, said that much of this disease burden could be reduced or even abolished with appropriate public health measures such as reducing smoking, increasing opportunities for exercise and improving the nation's diet.

But Dr Georgios Lyatzopoulos of the Norfolk, Suffolk, and Cambridgeshire Strategic Health Authority warned that rising rates of obesity ensured that cardiovascular disease would continue to be a major cause of death and disease.

Pharmacogenomics: genetically-tailored medicine (people with certain genetic variations may not benefit from particular drugs).

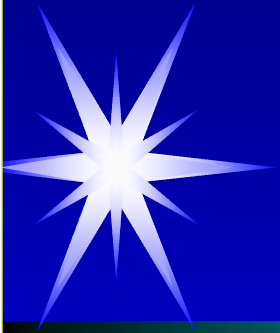
Nutrigenomics: extends this concept to food. Current examples:

- People with phenylketonuria, a rare inherited disease that leads to mental retardation, need a low-protein diet.
- People with a particular gene variant cannot digest milk.
- Moderate alcohol consumption is considered to reduce the risk of heart disease and cataract, but for people with the APOE4 gene, alcohol consumption raises the level of bad cholesterol.

Future food products will utilize the molecular mechanisms triggered by particular nutrients. For example; research at Johns Hopkins has identified which genes are turned on by sulforaphane, the compound in broccoli that appears to reduce the risk of some forms of cancer.

New food processing technologies – such as microencapsulation – allow the incorporation of therapeutic doses of these compounds (some of which are not very palatable in large amounts) into standard food products.

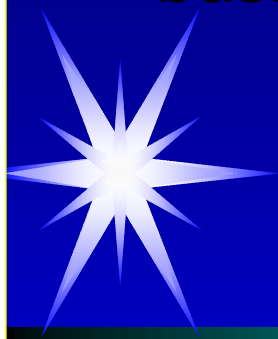
Functional foods



Many plants & animals have evolved systems of biological/chemical attack and defence.

This is particularly true for sessile forms with few physical defences – a number of plants, for example, have developed chemicals that disrupt the metabolism of their predators and parasites as a means of deterrence/protection. Some of these biological defence mechanisms can be used in the treatment of infection and disease.

We have been exploiting these chemical defences for at least three thousand years; they are still the basis for much of today's pharmacopoeia.



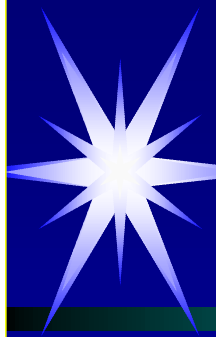
Many of today's giant pharmaceutical firms developed their first products from natural sources – this includes atropine, aspirin, morphine, penicillin and many others.

About half of the drugs most used in the US today were originally developed from naturally-occurring chemicals.



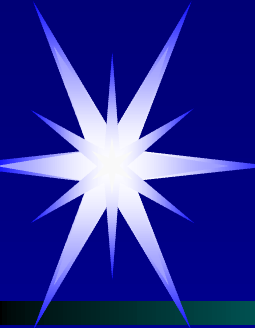
But we need new sources....

- The industry has problems with declining productivity and thin pipelines – there were only 36 NASs produced in 2002, the lowest rate of new drug development in 20 years (IMS Health 2002 Annual Review).
- So pharmaceutical companies are anxious to gain access to new biological resources, such as plants with potentially important actives.
- Jamaica has 348 plants with actives in Jamaica, 45 of which are endemic.



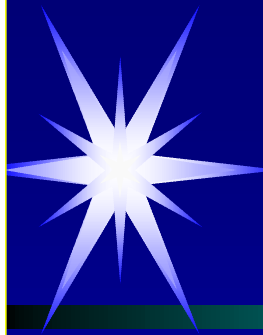
The nutraceuticals market

- Nutraceuticals/functional foods: actives and micro-nutrients used to reduce the impact of age-related degenerative disease.
- Combined value of European, US, Japanese & Australian markets (2003): US\$9.925bn. (Japan only: \$4.5bn.). Defining products more loosely (LFRI, 2004): \$24.2bn.
- The market is growing at ~10% p.a., and there is good long-term growth potential, partly because 80% of the world population relies partly upon traditional medication for primary health care, and partly because some useful actives are now moving into the major markets.



Possible high-value extracts

- Ginger contains flavonoids that have anti-inflammatory, vascular stabilizing and anti-platelet effects. They can be used in the treatment of rheumatoid and osteo-arthritis, and they are likely to be cardio- and stroke protective.
- Turmeric contains flavonoids that are anti-inflammatory, and also block tumor necrosis factor alpha. They are likely to find a use in the treatment of arthritis, asthma and ulcerative colitis, and their properties also indicate that they will be cardio- and stroke protective.
- Banana contains various phospholipids, some of which may reduce the risk of heart disease, asthma and allergic rhinitis conjunctivitis. The highest levels of phospholipids are found in the skin of the banana, normally a waste product.



Impact of liberalization

- Liberalization opens markets to additional competition and suppliers, which increases flows of trade.
- But liberalization also removes barriers to cross-border ownership, FDI, M&A.
- This accelerates the transfer of skills, technologies, standards and management systems, and integrates companies into global supply chains.

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Thank you !



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