28\textsuperscript{th} Session of Industrial Development Board
Vienna, 25 - 27 May 2004

TECHNICAL COOPERATION HIGHLIGHTS
Abel J.J. Rwendeire
Managing Director-PTC
Technical Cooperation Delivery
1990 – 2003 (millions of US dollars)

US$ millions

-43% budget cut

+16%

+38%
1. Sharpen strategic focus of and match human and financial resources
2. Provide BOTH detailed and comprehensive overview of PTC TC and global forum activities
3. Improve quality by involving line managers and branch staff in business planning
4. Increase TC delivery (+10 % after Plans’ introduction in 2003)
5. Recognize individual staff and team achievements
TC-delivery (US$m) as of May

1st year of biennium
2nd year of biennium
Thematic areas

- Poverty reduction through productive activities
- Advancing human security in post-crisis situations
- Trade capacity building
- Energy and environment
Poverty reduction through productive activities

- SME cluster development programme, with ILO and ESCWA
- Rural, women and youth entrepreneurship
- Africa Foreign Investment Survey (country)
- UNIDO/FAO community-based agro-related manufacturing activities
Advancing human security in post-crisis situations

1. Programme development for human security challenges

2. Community building for food security and poverty alleviation in Sudan

3. Agreement with FAO to cooperate in Iraq
Trade capacity building

1. Implementation of WTO-UNIDO MoU: seminars in Cambodia, Cuba, Bolivia
2. Bangladesh quality support programme: €10 million EU funding
3. Concept development on trade capacity building and development of cotton chain in Africa
4. Preparations for participation in UNCTAD XI
5. Productivity and quality programme in CEE/NIS
6. E-learning tool for total quality management
7. SPX-Chongqing, China inaugurated
Energy and environment (1)

- **Climate Change:**
  - Economic benefits for Nigerian industry

- **Montreal Protocol:**
  - UNIDO’s 3-year B. Plan (2004-2006)
    - US$130m

- **POPs programme:**
  - Direct access to GEF funding
  - NIP in 38 countries approved: US$19.4 million
Energy and environment (2)

- Cooperation with IFAD in land-degradation in Morocco
- International Waters: Guinea Current, Gulf of Mexico, Humboldt Current
- Joint initiatives: ITPO UK and NCPCs in Cuba and St. Petersburg
Clean energy project for Caribbean SIDS completed

South-South cooperation strengthened in mini-hydro and biomass gasification

International Centre on Hydrogen Energy Technologies project started

Global Biotechnology Forum
UNIDO’s mandate

Chapter 16 of Agenda 21 of the work programme adopted by the 1992 United Nations Conference on Environment and Development

- Potential for biotechnology & sustainable development
- Increasing food availability and renewable materials
- Improving human health
- Enhancing protection of the environment

In December 2002, Res.57/237 of the UN GA

IDB.26/Dec.8 adopted by the Industrial Development Board of UNIDO on the Global Biotechnology Forum
Context: biotechnology and industry

- Biopharmaceuticals +++
- Specialty chemicals +
- Colorants, food additives, cosmetics ++
- Vaccines +/-
- Edibles and commodity crops +/-
- Bioremediation and bioleaching ++

(+) denotes relative importance
### Industrial Biotech: Market Estimates

<table>
<thead>
<tr>
<th>Product</th>
<th>Annual market (US$ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>56 – 120</td>
</tr>
<tr>
<td>Industrial enzymes</td>
<td>1.2</td>
</tr>
<tr>
<td>Detergents</td>
<td>0.7</td>
</tr>
<tr>
<td>Starch</td>
<td>0.16</td>
</tr>
<tr>
<td>Textiles</td>
<td>0.13</td>
</tr>
<tr>
<td>Baking and beverages</td>
<td>0.18</td>
</tr>
<tr>
<td>Biocatalysts</td>
<td>0.05 - 0.1</td>
</tr>
<tr>
<td>Diagnostics</td>
<td>0.15 - 0.2</td>
</tr>
<tr>
<td>Biomaterials and bioenergy</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>

**Estimated total** 60 - 120

Source: Ten Kate and Laird, 1999
Kava Kava

(*Piper methysticum*)
Herbal Dietary Supplement

- Kava Kava Extracts;
  - Unique tropical herb
  - Contains Kava lactones
  - Mild herbal Sedative
  - Eases tense muscles
  - Relaxes the body
  - Makes mind calm, sharp and clear
  - Harmless antidepressant
Kava¹: Value & Production Chain

1. Piper methysticum
Specific objectives

Examine biotechnological opportunities and challenges
Assess possible restrictions and suggest possible mechanisms to overcome them
Explore means of capacity-building
Explore contributions to health care and pharmaceuticals, relating to use and potential export markets
Propose mechanisms for technology transfer
REGIONAL GBF MEETINGS

- **AFRICA**: Nairobi, Kenya: March 2003
- **LAC**: Brasilia, Brazil: July 2003
- **EUROPE**: Vienna, Austria: December 2003
- **ASIA PACIFIC**: Chengdu, China: December 2003
Global Biotechnology Forum

Concepcion, Chile 2-5 March 2004

Participation:
- Participants, Delegations & speakers: 481
- Exhibitors: 70
- Scholarship holders: 679
- Organising Committee: 60

TOTAL: 1,290

(Does not include Press personalities)
Forum organization

1. Ministerial discussion panels
2. Plenary sessions
   Keynote lectures on the themes; bio industry, biotechnology and health care, agricultural biotechnology, bio safety, technology transfer, trade, financing bio industry, regulation and biotechnology
3. Working groups
   In-depth treatment of themes similar to those for the plenary sessions
1. Creation of information network and databases
2. Formation of a multi-stakeholder forum
3. Mobilization of resources for capacity-building
4. Facilitation mechanisms for accessing to intellectual property
1. Major recommendations for practical initiatives

2. Modalities for implementation of proposals

3. Funding mechanisms for possible initiatives

4. Coordination of the efforts and activities

5. Reporting proceedings to General Assembly
## UNIDO follow-up activities

<table>
<thead>
<tr>
<th>UNIDO programme areas</th>
<th>Examples of potential biotechnology applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>Biomass utilization</td>
</tr>
<tr>
<td>Environment, cleaner production</td>
<td>Biocatalysts, bio- and phyto-remediation</td>
</tr>
<tr>
<td>International conventions and GEF</td>
<td>Biological diversity, biosafety</td>
</tr>
</tbody>
</table>
Bioethanol

CO₂

Produce biomass

Convert and/or process biomass to fermentation feedstock

Ferment biomass intermediates to ethanol

Recover ethanol and byproducts
Phyto-remediation

Volatilization
Transpiration

Accumulation

Heavy metals,
radionuclides
TCE/PCE
metabolites

Inorganics
Heavy metals
Radionuclides

Organics
TCE
PCE

Rhizospheric
Metabolism

Metals, organics,
& radionuclides

Soil & Sediment
Stabilization

Mercury,
selenium,
TCE & PCE,
+ metabolites
Biosafety

All scientific processes contain uncertainty:

1. Management of potential biotechnology-related risks
2. Precautionary approaches in context of commercial and trade pressures
3. Capacity building for calculated risk assessment
4. Role of science and factors in determining public acceptability of technology
Thank you for your kind attention