

R&D Priorities and Prospects of Philippine Biotechnology

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Outline of Presentation

- Overview of Philippine Biotechnology R&D
- Biotechnology R&D Priorities
 - Agriculture, Forestry
 - Fisheries and Aquatic Resources
 - Industry and Energy
 - Environment
 - Health
- Needs & Challenges



National S&T Plan (2002 – 2020)

Vision:

By 2004, S&T shall have contributed significantly to the enhancement of national productivity and competitiveness, and to the solution of pressing national problems.

By 2010, the Philippines shall have carved niches and become a world-class knowledge provider and user in selected areas; it shall also have developed a vibrant Filipino S&T culture.

By 2020, the Philippines shall have developed a wide range of globally competitive products and services which have high technology content.



National S&T Plan (2002 – 2020)

Goals:

- *World-class capabilities in ICT;*
- *Technological leadership in ASEAN in the fields of biotechnology, materials science, and microelectronics;*
- *Adequate number of quality scientists and engineers in the country*
- *Robust technology- and knowledge-based industry sectors and globally competitive products;*
- *Quality S&T-oriented higher education sector*
- *Top performance in science and math;*
- *Highly developed culture of innovation and S&T consciousness;*
- *Enhanced private sector participation in S&T and R&D activities; and*
- *National R&D expenditure level at 1% of GDP*



Policy Directions

- Biotechnology is an identified long term area thrust in the National Science and Technology Plan (NSTP).
- As part of the 2006 DOST 8-point Agenda, DOST is putting in place a comprehensive priority R&D program in biotechnology.



Competitive Strengths of Philippine Biotechnology

- Among the basic sciences, biology training and research is most developed in the country.
- Highest number of trained scientists and technologist
- Adequate supply of biomass
- Diverse flora and fauna which are excellent gene resources for biological processes
- Established institutions in biotechnology training and research



Biotech R&D Institutions

- University of the Philippines System
 - Biotechnology Network (BIOTECH – UPLB, NIMBB – UP Diliman, NIMBB – UP Visayas, NIMBB – UP Manila)
 - IPB, IC, IBS - UP Los Baños
 - NSRI, MSI - UP Diliman
- R&D institutions
 - Philippine Rice Research Institute
 - Philippine Carabao Center
 - Philippine Coconut Authority
 - Research Institute for Tropical Medicine
 - ITDI-DOST
- Private R&D Institutions
 - St. Luke's Medical Center
- Universities & Colleges

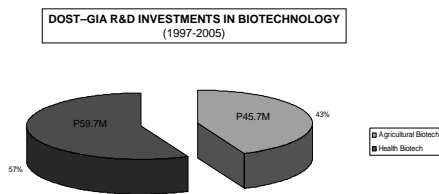


Funding for Biotech R&D

- Department of Science and Technology
 - DOST Central Office (DOST GIA)
 - Sectoral Planning Councils (PCARRD, PCASTRD, PCIERD, PCAMRD, PCHRD)
 - NRCP
- Other Government Agencies
 - Department of Agriculture (PhilRice, DA – Biotech PIU, DA – BAR, PCA)
 - Department of Health
- State Colleges and Universities
- Private Sector
- External Sources (Foreign funding agencies)



DOST Investments



Biotechnology R&D Priorities

- Food Biotechnology
 - Functional foods and nutraceuticals
 - Nutrigenomics
 - Detection kits for microbial contaminants
- Industrial Biotechnology
 - Enzyme technology/industrial enzymes
 - Bioplastics
 - Biofuels
 - Coconut Methyl Ester (CME)
 - Bioethanol



Biotechnology R&D Priorities

- Medical and Health-Related Biotechnology
 - Development of pharmaceutical products
 - Natural Products development
 - Development of other technologies and processes
 - Bioinformatics



Biotechnology R&D Priorities

- Agricultural and Forest Biotechnology
 - Genomics/Proteomics
 - Diagnostics
 - Vaccines
 - Marker-assisted selection breeding
 - Molecular markers for useful plant/animal traits
 - GM crops/transgenics
 - Biofertilizer
 - Biopesticides
 - Biopharming
 - Bioinformatics



Biotechnology R&D Priorities

- Fisheries and Aquatic Biotechnology
 - Development of genetic markers
 - Screening of novel and bioactive compounds for new drugs, pharmaceuticals and therapeutic agents from aquatic resources
- Bioremediation
- Diagnostics/vaccines
- Development of genetically improved strains of cultivable species
- Establishment of germplasm center of economically important seaweeds



Biotechnology R&D Priorities

- Environmental Biotechnology
 - Bioremediation
 - Waste management
 - Biosensors for environmental pollutants



Needs and Challenges

- Sustained/increased government support for biotechnology R&D
- Continuous development of human resource and institutions for R&D
- Technology transfer and commercialization of research outputs
- Collaboration and strategic partnership with private sector/ industry in R&D
- Development of favorable and relevant policies and regulations



Thank you!
Maraming Salamat Po!