### 2<sup>nd</sup> National R&D Conference

# 2017 – 2022 Industry Sector R&D Priorities

Presented by:

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# Harmonized National R&D Agenda (2017 – 2022)

# **R&D Priority Areas and Programs**

National Integrated Basic Research Agenda (NIBRA)

- Water Security
- Watershed studies, water quality, accessibility and availability
- Food and Nutrition Security
- Food safety, biodiversity studies
- Health
- Fundamental studies on natural products development, animal health, social dimensions on health •
- Clean Energy
- Alternative energy
- Sustainable Communities
- Vulnerable ecosystems, data collection on natural phenomena, environmental .
   and anthropogenic activities
- Re-engineering the Philippines towards .
  Inclusive Nation-Building
- Documentation of indigenous knowledge, data collection on social phenomena, education, national security and sovereignty, arts, history and culture

Health

- Drug Discovery and Development
- Diagnostics
- Genomics/Molecular Technology
- Functional Foods
- Hospital Equipment and Biomedical Devices
- Information and Communication Technology for Health
- Nutrition and Food Safety
- Disaster Risk Reduction -Health
- Climate Change Adaptation - Health

Agriculture, Aquatic and Natural Resources Sector (AANR)

- Agriculture Crops
  - Germplasm research; Varietal improvement and selection; Good quality planting materials (QPMs); Cultural management and crop production systems; Postharvest processing and product development

#### Livestock

- Animal improvement; Improved reproduction, feeding and nutrition; Conservation and improvement of native animals; Vaccine, biologics and diagnostics; Detection of chemical residues and antimicrobial resistance; Decision support systems; Product development and processing
- Fisheries and Aquaculture
  Applied genomics; Culture systems; Culture of new cultivable species; Fish health,
  - Applied genomics; Culture systems; Culture of new cultivable species; Fish health, disease diagnostics and management; Nutrition, feeds and feeding systems; Postharvest handling, processing and product development; Automation of feeding, water and culture management and post production; Fishkill warning and mitigation systems and environmental management; Management of fisheries
- Forestry
- Development and sustainable management of tree plantations; HYV development of priority timber species; Production protocols for the production of QPM; Sustainable cultural management practices, harvesting and postharvest techniques and marketing strategies
- Natural Resources and Environment
  - Biodiversity; Watershed management and utilization; Soil management and rehabilitation; Agricultural and forest wastebased product development; Climate change strategies and decision support tools; Resource assessment and monitoring; Habitat management; Marine environmental management; Innovative systems for unique landscapes and ecosystems
- Technology Transfer
  - Upscaling of technology transfer and commercialization; New and innovative extension modalities; Technology business incubators

ocio-economics and Policy Research

• Food and Nutrition

Industry, Energy and

 Countryside Development

Security

- Competitive Industries
- Delivery of Social Services
- Intelligent Transportation Solutions
- Renewable Energy and Energy Storage Solutions
- Human Security

Disaster Risk Reduction and Climate Change Adaptation (DRR CCA)

- Observation and Monitoring Networks
- Technology Development and Application for Monitoring
- Modelling and Simulation for Improvement of Monitoring and Forecasting
- Hazards, Vulnerability and Risk Assessment
- Warning and Risk Communication
- Technology Development and Application for Climate Change Mitigation and Adaptation
- Technology Development and Application for Disaster Risk Management

# **Food and Nutrition Security**

Affordable Tests for Food Contaminants

 Development of Food Safety Rating and Grading System for Food Service Establishments

 Safe and Regulatory-Compliant Food Products and Processes

Improvement of Food Shelf-life

Innovative Food Products







### **Countryside Development**

- Agro-Processing, Utilization and Value-Adding
- Natural Products Development
- Improvement of Textile Processing
- Halal Processing Technologies for Food and Non Food
- Metrology and Testing Methods for Laboratory Analysis
- Shop Floor R&D and Innovations

Regional Consortia R&D







Photo credit: lawrencedale.com; PTRI

# **Competitive Industries:** ICT, Electronics and Semiconductor

- Big Data Analytics
- Artificial Intelligence
- Internet of Things
- Advanced Electronics and Communications (e.g. photonics & opto-electronics devices, semiconductor materials, etc)





# Competitive Industries: Mining and Minerals

- Green Mining Technology
- Clean Metallurgical Processes



# Competitive Industries: Metals and Engineering

- Advanced Machine-Based or Machine Aided Metalworking and Testing Procedures
- Technologies for Disposal, Recycling, and Treatment of Metal Wastes





# Competitive Industries: Construction

New Construction Materials and Techniques



# Competitive Industries: Packaging

- Smart and Green Packaging Technology
- Appropriate Packaging System for Various Products





# Competitive Industries: Industrial Application of Nuclear Technology

- Food and Non-Food Processing
- Non-Destructive Testing
- Product Development
- Environment Monitoring







### Delivery of Social Services: Environment and Pollution Control

- Wastewater Management
- Air Pollution Control and Management
- Solid Waste Management





### Delivery of Social Services: Space Technology Application (STA)

- Development of Micro-Satellites and Space Technologies
- Use of STA for Resource Mapping
- Application of Global Navigation Satellite System (GNSS)

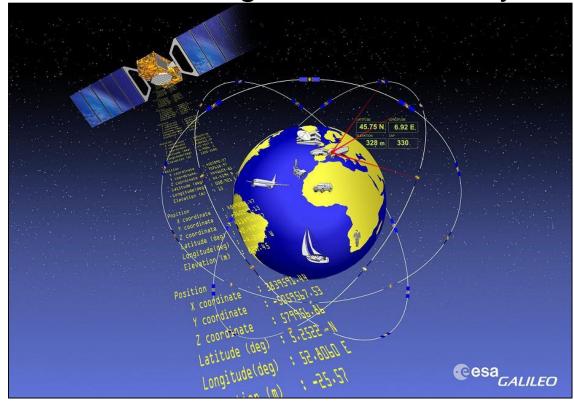
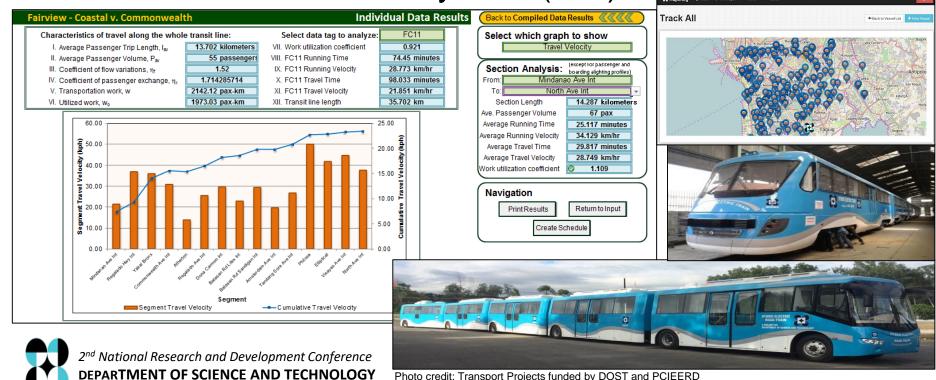




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# **Intelligent Transport Solutions**

- Alternative Mass Transport Systems and Components
- Intelligent Vehicle-to-Vehicle Connectivity and Information Sharing
- Sea-worthy Hull Design
- Automatic Identification System (AIS)

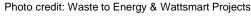


# Renewable Energy and Energy Storage Solutions

- Energy-efficient Technologies for Industry and Buildings
- Renewable Energy Systems & Bioenergy Technologies
- Functional Materials for Alternative Energy Sources and Energy Conversion and Storage







# **Human Security**

- Food Defense
- Biosecurity
- Cybersecurity

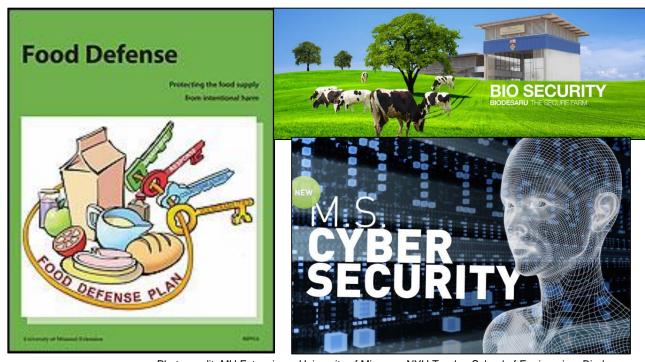


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### **Funding Programs**

#### Regular Funding Support

- Regular Grant-in-Aid
- Technicom (c/o TAPI)

#### Institutional and Human Resources

- Institutional Development Program (IDP)
- Technology Business Incubation
- Training and Conference Attendance Support
- Overseas Collaboration Programs

### **Special Funding Support**

- Young Scientist Program (YSP)
- Equipment Use Grant (ADMATEL, EPDC, PNRI)
- Equipment and Facilities Management Program

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