East Asia Science and Innovation Area Joint Research Program (e-ASIA JRP)

1st Scientific Advisory Council (SAC) Meeting

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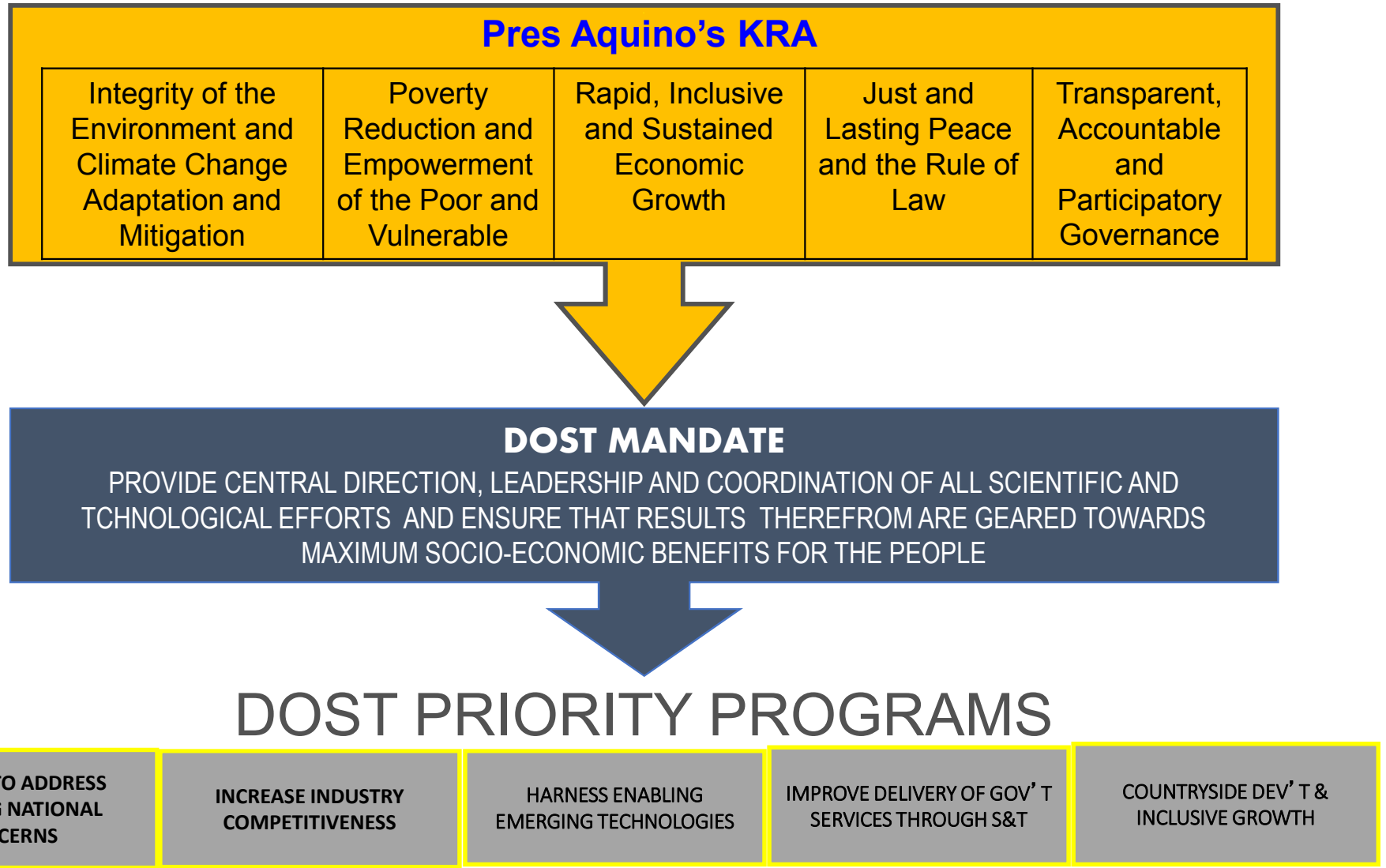
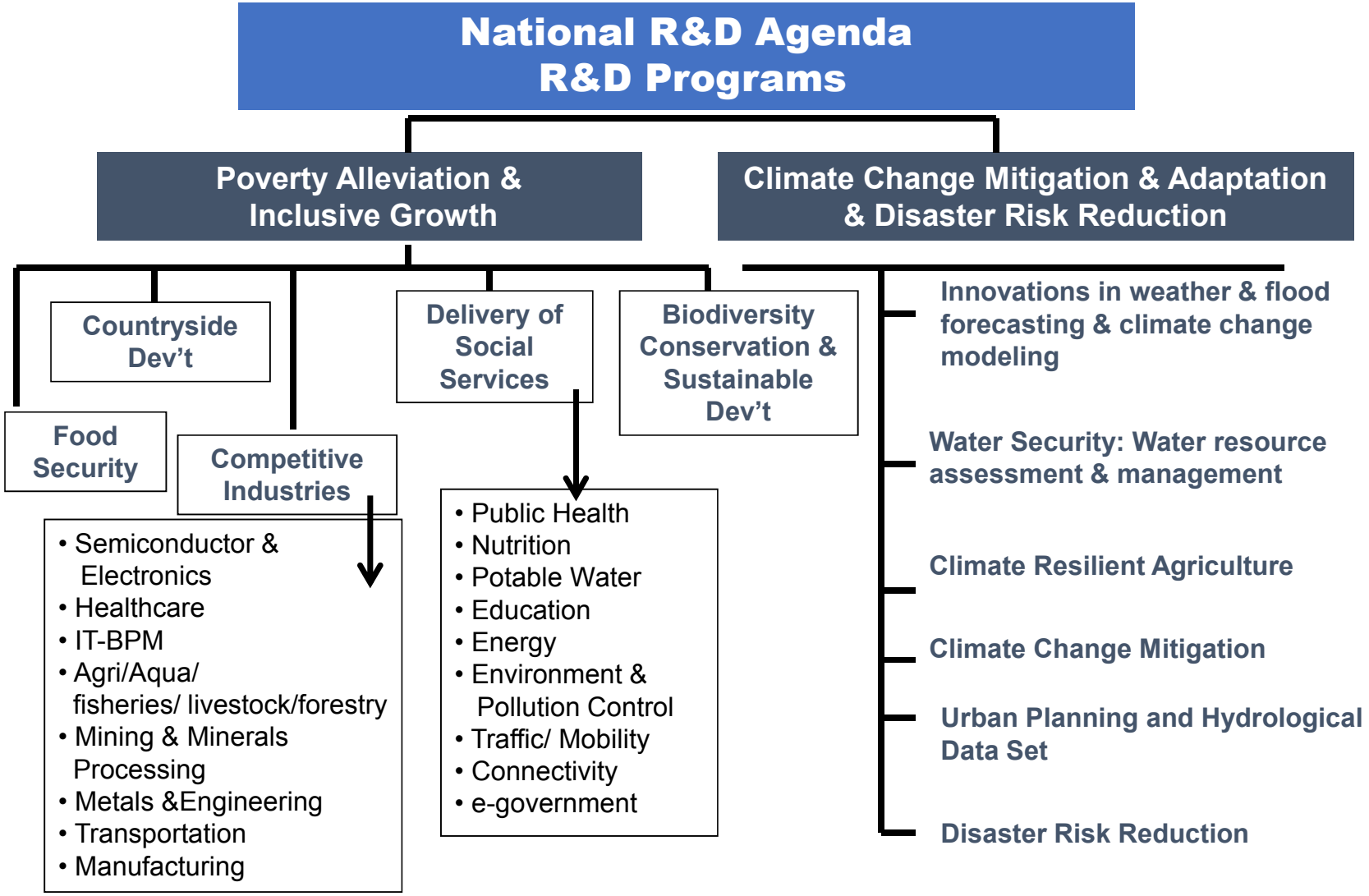
Kuala Lumpur, Malaysia

21 February 2014

Department of Science and Technology

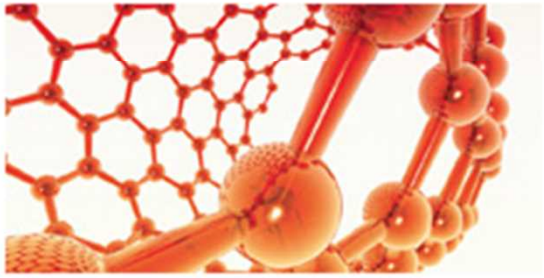
PHILIPPINE COUNCIL FOR INDUSTRY, ENERGY AND EMERGING TECHNOLOGY RESEARCH AND DEVELOPMENT


Pres Aquino's KRA
Integrity of the Environment and Climate Change Adaptation and Mitigation
Poverty Reduction and Empowerment of the Poor and Vulnerable
Rapid, Inclusive and Sustained Economic Growth
Just and Lasting Peace and the Rule of Law
Transparent, Accountable and Participatory Governance
DOST MANDATE
PROVIDE CENTRAL DIRECTION, LEADERSHIP AND COORDINATION OF ALL SCIENTIFIC AND TCHNOLOGICAL EFFORTS AND ENSURE THAT RESULTS THEREFROM ARE GEARED TOWARDS MAXIMUM SOCIO-ECONOMIC BENEFITS FOR THE PEOPLE
DOST PRIORITY PROGRAMS
USE S&T TO ADDRESS PRESSING NATIONAL CONCERNS
INCREASE INDUSTRY COMPETITIVENESS
HARNESS ENABLING EMERGING TECHNOLOGIES
IMPROVE DELIVERY OF GOV'T SERVICES THROUGH S&T
COUNTRYSIDE DEV'T & INCLUSIVE GROWTH


National R&D Agenda
R&D Programs
Poverty Alleviation & Inclusive Growth
Climate Change Mitigation & Adaptation & Disaster Risk Reduction
Countryside Dev't
Food Security
Competitive Industries
Delivery of Social Services
Biodiversity Conservation & Sustainable Dev't
• Semiconductor & Electronics
• Healthcare
• IT-BPM
• Agri/Aqua/ fisheries/ livestock/forestry
• Mining & Minerals Processing
• Metals &Engineering
• Transportation
• Manufacturing
• Public Health
• Nutrition
• Potable Water
• Education
• Energy
• Environment & Pollution Control
• Traffic/ Mobility
• Connectivity
• e-government
Innovations in weather & flood forecasting & climate change modeling
Water Security: Water resource assessment & management
Climate Resilient Agriculture
Climate Change Mitigation
Urban Planning and Hydrological Data Set
Disaster Risk Reduction

Redefinition of Fields of Cooperation

Fields of cooperation to be decided by discussion among participating members.
These fields are parts of promising candidates.



Nanotechnology and Materials

Biomass and Plant Science

Infectious Diseases

Disaster Prevention

Advanced Interdisciplinary Research towards Innovation

Potential Partner of Collaboration

ASEAN

+

8 (Australia, **Japan**, New Zealand, China, India, Korea, Russia, **U.S.**)

NANOTECHNOLOGY

1. Nanostructured Solar Energy Devices
2. Nanosensors and Nanostructured Materials for Food and Environmental Sensing
3. Optically transparent spinel/mullite-based ceramics
4. Novel doped-titanium dioxide catalysts
5. Electrocatalysts Based on Graphene
6. Conjugated Diblock Copolymers
7. Electropolymerized MIPs and Nanomaterials
8. DNA-Based Nano Biosensor for Food
9. Carbon Nanotubes
10. Solid State Dye Sensitized Solar Cell

INFECTIOUS DISEASES

1. Diagnostics
   - Dengue and dengue-like illness
   - Multidrug Resistant/Extensively Drug Resistant Tuberculosis (MDR/ XDR TB)
   - Drug-Resistant Malaria
   - Influenza-like illness
   - Leptospirosis
   - Sepsis
   - Human immunodeficiency virus (HIV)
   - Hepatitis
2. Genomics/ Molecular technology
3. Drug Discovery & Development
4. Environmental & Climate Change

DISASTER PREVENTION

1. NOAH Program
2. Smarter Visayas
3. Science for Safer Communities

Industry Strategic S&T Plans (ISPs)

1. Abaca
2. Coconut
3. Jackfruit
4. Mango
5. Papaya

Technology Business Incubation (TBI)

1. DOST-PEZA Open TBI
2. DOST-UP Enterprise Center
3. DOST-Cebu TBI
4. DOST-UPLB
5. DOST-CLSU

DOST Programs

Possible Areas of Collaboration

NANOTECHNOLOGY

Bench –Scale Verification of the Production and Testing of:
1. Nano Sensors for Food, Virus Detection for Banana, Detection for Bisphenol A
2. Nano-Biodegradable Packaging Materials for Food Application
3. Food Grade Nano-Precipitated Calcium Carbonate from Limestone
4. Nano-Encapsulated Plant Growth Promoter for High Value Crops

INFECTIOUS DISEASES

1. Developing new tools for monitoring drug resistant malaria in the ASEAN region
2. Southeast Asian collaborative research and development of Pharmacogenetics for Anti-Tuberculosis Drug Induced liver Injury (SEAPHARM-AT-DILI)
3. Development of a Novel 3-Dimensional Human-Lung Tissue Construct (Organoid) for the Detection of Candidate Biomarkers for TB Treatment-Response Monitoring and Candidate Drug Screening
4. Development of Lead Compound for Dengue Inspired by Nature

DISASTER PREVENTION

1. Bench –Scale Verification of the Production and Testing of Nano Sensors for Gas Detection and Environmental Application and Arsenic Detection
2. Use of Multispectral Data from Microsatellite Data for Various Applications
3. Use of LIDAR Data for Various Applications
4. Development of a community-managed risk assessment system for multi-hazard observation and monitoring for an integrated end-to-end early warning, alarm and decision support systems
5. Development of an integrated urban flood inundation model for highly urbanized communities
6. Development of Compact Systems for Pre- and Post-Treatment of Industrial Wastewater (to meet at least Class C Water Quality)
7. Design and prototype of a cost-effective motorized amphibious light vehicle for 8-10 people capacity for urban flood rescue with estimated unit cost of P1.0M or less

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