

Priority Areas of R&D in Select Countries

The information on market for R&D services of CSIR labs in relation to assess international priority areas of some select countries considered to have been important and relevant has been compiled from various websites of the important departments and funding agencies etc. in respective countries and is given below as supplementary information to this report.

USA

After the September 11, 2001 incident the Bush administration issued its R&D priority for FY 2005 through a memorandum issued by the Office of Science and Technology Policy, Washington DC (OSTP) and Office of Management and Budget, Washington DC (OMB) entitled "FY 2005 Interagency Research and Development Priority" which laid out following five areas of R&D that should receive particular attention:

1. R&D for Combating Terrorism

- (i) Enhancing detection, treatment and remediation of chemical, biological and radiological threats.
- (ii) Developing and transitioning technology to first responders
- (iii) Promoting development of next generation vaccines, therapeutics and diagnostics
- (iv) Converting intelligence data into actionable knowledge
- (v) Assessing the social and behavioral aspects of terrorism
- (vi) Facilitating inspections at ports-of-entry
- (vii) Securing critical infrastructure

2. Nanotechnology

- (i) Material science: study of polymer modification at nanotech level for development of new classes of materials
- (ii) Research relevant to medical care and homeland security

3. Networking and Information Technology

- Critical infrastructure protection and cyber security
- High performance computing

4. Molecular level understanding of life processes

5. Environment and Energy

- (i) Climate change
- (ii) Environmental observations for enhancing capabilities to assess and predict key environmental systems
- (iii) Hydrogen Fuel: Lowering the cost of hydrogen production, creative effective hydrogen storage and development of affordable hydrogen fuel cells.

Besides the above areas the following areas are also the priority areas for R&D in USA

6. Development of New medical devices, regenerative medicine for aging citizenry, new technologies that focus on diagnostic monitoring, tissue repair, drug delivery and cell based therapies
7. **Genomics and Proteomics:** applications for plants and animals
8. **Aeronautics :**
 - (i) Lower cost and greater convenience
 - (ii) Greater passenger and cargo capacity
 - (iii) Reduced environmental impact
 - (iv) Greater aviation system safety
 - (v) Improved aircraft performance

UK

The following 7 areas have been identified by the Department of Health, UK as priority areas for R&D:

1. Cancer
2. Mental health
3. Diabetes
4. Coronary heart disease
5. Genetics
6. Public health
7. Ageing and older people

Malaysia

The priority areas of R&D in Malaysia are given below:

1. Hydro-informatics and oceanographic data management
2. Ocean and coastal dynamics
3. Ocean – atmosphere interactions
4. Sea – bed research
5. Alternative energy sources from the sea
6. Marine ecosystem health and habitat rehabilitation
7. New uses of living marine resources
8. Development of instruments

European Union

The European Union has proposed the following 7 areas as the priority areas to be adopted jointly by the European parliament:

1. Genomics and biotechnology for health
2. Information society technologies
3. Nanotechnologies and nanosciences knowledge based multifunctional materials and new production processes and devices
4. Aeronautics and space
5. Food quality and safety
6. Sustainable development, global change and ecosystems
7. Citizens and governance in a knowledge based society

Australia

The following are the priority areas of R&D in Australia:

1. Genome and phenome research
2. Nano and bio-materials
3. Complex and intelligent systems
4. Photon science and technology

South Africa

The areas identified by South Africa as the most important to the people are as follows:

1. Development of vaccines for AIDS, Malaria and TB
2. Food fortification
3. Development of surveillance system for monitoring fatal and non-fatal injuries
4. Development of Self management tools for chronic diseases like hypertension, diabetes and psychiatric conditions
5. Cost effective on-sight diagnosis by means of telecommunication link through telemedicine lead programme

Austria

1. Geohazard research
2. Genome research
3. Earth observation for environmental securing the issues.

4. Securing the availability of high quality water drinking resources

Sweden

Sweden is well positioned to be an advanced developer and user of IT products and services. The Information and Communication Panel has identified several Key areas s of great importance to the future evolution of Information and Communication Systems. Some of the areas identified for R&D are given below:

1. Smaller computers that communicate easily with other objects to be built into products such as clothes, beds, books and sporting gear to facilitate production and use.
2. Computers to interpret human expressions, can smell, feel, hear, see and taste for use in health care equipment, traffic systems, houses, schools etc.
3. Human and intuitive human – computer that mimic human communication

Latin American Countries: Guatemala, Mexico, Peru and Venezuela

In the above countries of Latin America the biodiversity has not been very well documented and therefore the scope exits for survey of the biodiversity and its documentation.