About ARCAL

ARCAL is an agreement between most IAEA Member States in the Latin America and the Caribbean region for technical and economic cooperation to promote the use of nuclear techniques for peace and development. The ARCAL agreement provides a framework for Member State collaboration with the support of the IAEA and other international sources of cooperation. The agreement addresses key development priorities in the region, focusing on pressing needs related to food security, human health, environment, energy, industry and radiological safety.

ARCAL technical cooperation projects provide capacity building through expert missions, training courses, meetings, scholarships, scientific visits and workshops.

25 Years of ARCAL achievements

Since 1984, ARCAL has invested over US $33 million to promote Technical Cooperation among Developing Countries (TCDC) for the development of nuclear science and technology in Latin America and the Caribbean.

Over 1000 professionals and technicians have been trained through ARCAL projects in industry, radiochemistry, radiation medicine, plant nutrition and soil and water management.

Between 1984 and 2009, 72 projects have been completed within the sectors of health, agriculture, hydrology, energy development, industrial applications, nuclear safety and radiation protection.

ARCAL Member States (as of May 2010)

- Argentina
- Bolivia
- Brazil
- Chile
- Colombia
- Costa Rica
- Cuba
- Dominican Republic
- Ecuador
- El Salvador
- Guatemala
- Haiti
- Mexico
- Nicaragua
- Panama
- Paraguay
- Peru
- Uruguay
- Venezuela

For more information:

http://arc.cnea.gov.ar

http://www.iaea.org

Credit: Carlos Linares

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Food security

Latin America and the Caribbean account for 21% of world fruit production, over 7% of cereal, root and tuber production and almost 12% of the world’s grain legume production.

Degraded soils, deforestation and a deteriorating environment threaten food security in the region. 80% of people in rural areas and 20% of people in urban areas in Latin America and the Caribbean are malnourished.

Nuclear techniques can be used to improve plants, suppress agricultural pests, diagnose animal diseases and provide the tools to better manage soil, fertilizer use and irrigation. ARCAL projects contribute to improved animal production, enhance crops through plant mutation breeding and optimize soil-water management for plant nutrition purposes.

Human health

People in developed areas in Latin America and the Caribbean face chronic and degenerative diseases, while those in underdeveloped areas continue to struggle with communicable and deficiency related diseases. According to the Pan American Health Organization, chronic diseases are the leading cause of premature mortality accounting for two out of three deaths overall, and cancer is the second most frequent cause of death.

Qualified and trained medical staff and adequate facilities to diagnose and treat diseases are needed throughout the region.

ARCAL supports regionally harmonized training for radiation oncology, the introduction of advanced imaging technologies, analysis of malnutrition data and the application of nuclear techniques as fast and reliable tools to study, diagnose and control diseases, particularly cancer and cardiovascular disease. 25% of ARCAL’s resources are invested in human health projects.

Environment

Latin America and the Caribbean face environmental challenges that affect the atmosphere, water resources, earth and seas.

60% of urban and rural homes in the region lack a regular water supply and are dependent on groundwater. Air pollution is the cause of 2.3 million cases of chronic respiratory disease in children each year. The Latin America and the Caribbean region has 16% of the world’s degraded soils.

ARCAL projects work towards better water management, a greater understanding of toxins in soil and water, and effective monitoring of pollution in foodstuffs for local consumption or export.

Energy and industry

Nuclear power, experimental reactors and other industrial applications of nuclear technology are vital for the socioeconomic development of the Latin America and the Caribbean region. The region’s population is predicted to reach 720 million by 2030, greatly increasing the demand for energy.

ARCAL projects have established a regionally recognized capability for research reactor experimentation, radioisotope production and training, and have improved research reactor safety.

ARCAL projects in industry include sterilization of medical products, non-destructive testing and the use of radioactive tracers to improve the quality of products and services in the petrochemical, mineral ore processing, cement, sugar, paper and food processing industries.

ARCAL assists its Member States with national and regional infrastructure development for nuclear power programmes.

Radiation safety

Radiation safety activities protect individuals, societies and the environment from the harmful effects of ionizing radiation. Sustainable radiation protection programmes are necessary for strong national regulatory infrastructures.

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ARCAL projects in radiation safety focus on establishing a safety culture for radiation sources. ARCAL works to analyse and improve the region’s regulatory infrastructure, occupational and medical radiation protection, radiation protection of the public, radiological emergency preparedness and response, and education and training.