



## Project Description for ARASIA TC Programme

### TC Cycle 2018-2019

**Project Number:** RAS9087

**Project Title:** Enhancing Capacity in States Parties in Internal Dosimetry for Occupational Exposure (ARASIA).

**Overall Objective:** To enhance safety for radiation workers and reduce health risks from occupational exposure.

**Project Duration:** (2018 – 2019)

**Project Description:** There is a growing awareness among ARASIA Member States about the enormous magnitude of radiation exposure throughout the world and, particularly, in developing countries. External dosimetry is already established in all ARASIA Member States. However, most of these States have inadequate capabilities in internal dosimetry (in vivo and in vitro) and biological dosimetry, such as chromosomal aberrations, and the base of technical staff with solid training is rather limited. Consequently; the local services in the ARASIA States Parties will definitely need vital support in human capacity development in order to meet and cope with the demand for such services. Therefore, this project is expected to stimulate regional cooperation among the laboratories providing such services in the ARASIA Member States, and will contribute to strengthening the radiation protection capacity in the region. It has been suggested to focus on the following subjects: (1) Internal dosimetry for the assessment of occupational exposure due to internal exposure of radioactive material: direct (whole body counter), and indirect (bioassay, urines samples); and (2) biological dosimetry for high internal radiation dose assessment.

**Problem to be addressed:** Dosimetry providers in the ARASIA Member States need to improve the technique to provide new methodologies, such as internal and biological dosimetry to obtain a more accurate assessment of occupational exposure. In addition to the need to upgrade the existing technological infrastructure, human capacity building represents the highest priority and requires time to achieve. The technological infrastructure is being addressed by ARASIA Member States, whereas human capacity building needs to be enhanced and quality management systems in the existing laboratories need to be established, including harmonization of standard operating procedures (SOPs) at the regional level. This will contribute to enhance the quality of the services provided. It is expected that in addressing these issues, the capacity of the service provider laboratories will be enhanced, which will contribute to the quality of workers care.



**This project is proposed as a regional activity for the following reason(s):** There is a deficiency in ARASIA Member States in internal and biological dosimetry, therefore cooperation is a must to harmonize all these services in these countries. The project will address common needs to all ARASIA Member States in the area of human capacity building and establishment of quality management systems in the existing laboratories, which would support the ones under establishment and stimulate the exchange of scientific knowledge, experience and networking in the regional cooperation among ARASIA Member States.

**Stakeholders:** Stakeholders will include the national regulator, atomic energy commissions, Ministries of Health, radiation workers, major medical institutions and research institutions.

**Partnerships:** Partnerships will be established between atomic energy commissions, national research institutes and major medical institutions.

**Role of nuclear technology:** Nuclear technology is an essential part in this project because all workers are being exposed to radiation; the assessment for internal and biological dosimetry requires the use of different nuclear technologies (whole body counter, gamma and alpha spectrometry, inductively coupled plasma mass 105 spectrometry (ICP/MS), and liquid scintillation counter). The IAEA is expected to provide the required arrangements for coordination among project counterparts, technical support with capacity building, and management of financial resources.