

RAS/7/023 Supporting Sustainable Air pollution Monitoring Using Nuclear Analytical Technology (RCA)



**Lead country coordinator
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Participating Member States

**Australia, Bangladesh, China, India,
Indonesia, Mongolia, Malaysia, Myanmar,
New Zealand, Pakistan, Philippines,
Republic of Korea, Sri Lanka, Vietnam**

Project outcome (2012-2015)

- **Enhanced recognition of applicability and end-user use of nuclear analytical methods for air particulate matter monitoring using source apportionment and fingerprinting techniques in urban areas.**

Progress review of project outputs (1/2)

- Effective project management and coordination at both a regional and national level.

on schedule: national project teams, work plans and meetings

delayed: 6-monthly reporting

Mitigation measures were repeated requests for reports by email. Planned new initiatives for next reporting: meeting invites by calendar and SMS.

- National seminars on schedule
- Relationship between visibility and fine particulate matter on schedule
- Nuclear techniques and cultural heritage studies

Other: Training course took place in Sri Lanka, 7-14 July

The applicability of nuclear analytical techniques for cultural heritage studies is not clear so far.

Progress review of project outputs (2/2)

- Database tools **completed**
- Completion of database (RRU services) **other: limited information available**
- Database structure: **on schedule**
- Fine filters collected: **on schedule**
- Manuals for sampler, analysis techniques and source apportionment: **other: no progress reported to date**

Major comments from national representatives

- **Australia on track**

Agency related Workshops and meeting have been both timely and appropriate. TO highly supportive of the Project. All Australian aspects of the project are on time and within the budget. The RCA country database containing 14 of the 15 countries covering more than 10 years of sampling should be completed before the next PMF workshop in Korea in June 2015.

- **Bangladesh on track**

Twelve continuous air monitoring stations handled by Department of Environment. Scientists of BAEC are giving expert service in assessing the report. Results published in international journal. Scientist of BAEC has attended in the National Workshop as an IAEA Expert to Pakistan.

- **China on track**

The experiences we got from this project helps the end-user to evaluate the air particulates haze a lot. The co-projects are increased in 2014. The RRU service is very helpful to deal with our sample analysis.

- **India on track**

Generate long term particulate matter data for India and application of PMF for source fingerprinting.

Major comments from national representatives

- Indonesia **on track**

The application of NATs such as XRF, NAA and PIXE have been implemented in characterization for several samples collected from several regions. The use of NATs has been increased and the number of end users is expanding in several provinces in Indonesia

- Mongolia **on track**

Samples collected as planned. Sources identified. International publication. Extended project locally with NEA Mongolia. RRU service for China.

- Malaysia **on track**

Establishment of national database on fine and coarse particles. Identified of source fingerprint on fine particle – motor vehicles, industry, biomass burning/smoke, secondary sulphate, soil. IAEA should continue to provide financial support for RRU services especially for the member state who does not has XRF facility in their laboratory.

- Myanmar **no progress report received**

- New Zealand **on track**

GENT sampler shifted to cultural heritage site in Rotorua. New XRF system installed for fine and coarse particulate matter analysis.

Major comments from national representatives

- Pakistan **on track**

Sampling continued in Lahore. Agreements reached with Punjab Archeology Department for provision of building material samples and with Mayo Hospital for provision of patient data on high episode days. Tile, brick, mortar and plaster samples collected from Lahore Fort for elemental analysis. Equipment repair is an issue. Identification of source fingerprints and publication of results. Remedial and control measures may be suggested based upon the results obtained.

- Philippines **no progress report received**

- Republic of Korea **no progress report received**

- Sri Lanka **on track**

Project activities are implemented in Kandy sampling site. Data submitted to the regional database. Impacts of APM on cultural heritage objects in Kandy museum was identified and planned to initiate the monitoring program. Database Publication, Coarse filters are analyzed using ED-XRF (AEA) but unable to analyze more elements since they are in the below the detectable levels.

- Vietnam **on track**

Summary

- Overall, the project performs well.
- Sampling is happening relatively smoothly across the Member States as demonstrated in NPC reports.
- NATs are now mostly available in the Member States. New systems in Mongolia and Indonesia have helped the project greatly. To note, Mongolia undertook a RRU service for China.
- The database is shaping up nicely.
- Gaps in database are still an issue. RRU services could be used more effectively.
- Training courses in cultural heritage and database management took place as planned.
- Feedback for the database workshop was excellent; feedback for the cultural heritage course was mixed.
- Reporting has been an issue.
- No information on contracts for database coordinator and experts for writing manuals.