IUPAC-UNESCO-UNIDO Environmental Safety and Management (ESM) Training:

The Impact on Research Institutes in Nigeria

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Sponsored by IUPAC-UNESCO-UNIDO / COCI / MCI, Japan
IUPAC-UNESCO-UNIDO ESM training:

Purpose of the training:

The Safety Training Program have been established and maintained to promote interactions between Developed Countries and the developing world to disseminate state-of-the-art knowledge on safety and environmental protection in chemical production.

At Where?

MITSUI Chemicals, Inc., Japan

Mitsui Chemicals, Inc
Shiodome City Centre, 1-5-2 Higashi-Shimbashi,
Minato-ku, Tokyo, 105-7117, Japan.

One of Japan's largest producers of petrochemicals,

The company produces petrochemicals use in the manufacture of:

- Synthetic rubber & pigments;
- Phenols - pharmaceuticals, ink, building blocks for plastics and adhesives;
- Polyethylene terephthalate (PET) and agrochemicals
- Fiber intermediates used in polyester, industrial chemicals used in paper,
- Polymers used in pipes and films, and specialty resins used in adhesives.

MCI continuously utilized chemistry boundless potentials in providing technologies, innovations and creations of materials to man and at the same time keeping in harmony with the global environment.
The training at MCI - Outline:

Works tour:

**EHS check list** - Completion of checklist for Safety & Health activities audit.

**ESM in works** - Safety and environmental

**ESM activities**
- Material Safety Data Sheet (MSDS)
- Hazard and Operability studies (HAZOP).
- Accident investigation technique
- Danger Prediction and finger pointing

**Environmental Management** - water treatment sludge
Training method

- Lectures & Discussions;
- Demonstrations & Exercises;
- Plant visits – waste water treatment & other plants

Audio-visual aids

A guide to safety and Health management – Japan Inter. Train. Coop., 1993
Environmental Safety manual of Works visited
Situation on Ground:

Are there guide or document on hazardous waste management, including laboratory chemicals and containers, labeling and packaging and waste documentation?

Are there lay down rules, laws or documented safety policy?

If available, are they properly implemented?

Are staff knowledgably about safety / or any conscious effort in training the old and new staff?

What are the role of electronic media / internet?
Toxic chemicals dumped on April 26th, 2005,
Onipepeye, Ibadan Oyo State, Nigeria

“...the substance was not toxic but chlorine gas dumped by unknown persons....” - Official

“...we ignored the smoke, after a few seconds we discovered we couldn't breathe, our chest became heavy, we soon slumped to the ground, and every one else complained about the same thing”, Community Leader:

“...but if it was reported on time we don't have gas masks so we can't face something we know is dangerous. We also don't want to die,” - State Environment Ministry

Punch / ERA May 17, 2005
Rubber Research Institute of Nigeria (RRIN)

Disseminates proven research results and techniques to farmers, relevant agencies on rubber and gum arabic;

Co-ordinates extension services in Nigeria on their mandate crop;

Organize technical and vocational courses in areas relevant to the above;

Provide laboratory and other technical services to farmers, agro-based industries & others who are interested in these services etc.
What are the problems/challenges.

- Some of the scientist believe this is not practicable within our environment
- Funding
- Too cumbersome
- It is only applicable to production industry
Appraoch:

- Create awareness within and outside the institute on relevance of environmental safety
- Trained research staff within and outside our institute
- Rescheduled the officers to specific instrument
- Inclusion of safety training in our yearly industrial attachment to University graduate attached to RRIN
Achievement:

- Renovation of the laboratory; provision for fume hood, eye wash, bath etc;
- Provision of fire extinguisher;
- Laboratory safety manual developed;
- Environmental safety and fire tracer committee;
- Provision of first aid kits to each Laboratory;
- The use of appropriate protective gear;
- Record note attached to each equipment;
- Trained our laboratory staff and some students from University and Polytechnics around.

Plan to extend the training to rubber producing / processing companies around us;

Regular emergency drill.
EXPERIMENTAL SAFETY FORM

Name:  
Division:  
Temperature of Reaction:  
Reagents Used:  
Duration of reaction:  
Start time of Reaction:  
Procedure to be adopted in case of emergency  
Emergency contact no:  
Signed  

Date:  
Supervisor:  
Atmosphere:  

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Thank you