

**Workshop on Library and Archive Material Mitigation of Water-Damage  
held 18<sup>th</sup> & 19<sup>th</sup> February National Library and Documentation Services Board,  
Colombo -7**

**Organized by National Library and UNESCO MOW National Committee Sri Lanka  
Sponsored by Goethe Institut**

### **Introduction**

National Library & Documentation Services Board (NLDSB) has formed a library disaster recovery team in 2013. Ten officials serve in this team. They were trained for fire rescue, first aids & library disaster recoveries. The main objective of this team is to assist the libraries in the country to recover or save the documentary heritage in a disaster. In addition they provide special instructions and assist to the libraries to conserve the library materials damaged in disaster. NLDSB has planned to conduct training workshop on this topic for extending this Library disaster recovery service throughout the Island.

### **Objective of the Training Workshop**

- To introduce the National Library “Disaster Recovery Team” and their service to the country.
- To extend the library disaster recovery activities throughout the country as a network.
- To train library professionals on library disaster management.
- To enhance the UNESCO MOW activities in the country.
- To exchange the knowledge on library disaster management with European experts.

### **Participants**

17 main public libraires, 6 University libraries, Departments of National Archives, National Library & Documentation Services Board, 6 local library professionals and National Library in Maldives participated the workshop.

### **Resources Person**

Dr. Mrs. Patricia Engel served as a resource person in this training workshop. She graduated as conservator-restorer from Vienna University of Fine arts (Dipl. Rest. Mag.) and Warsaw University of Fine Arts (Dr habil). She has been working as conservator-restorer since 1984. She headed university chair for book and paper conservation in Germany. Presently she is working as head of European Research Centre for Book and Paper Conservation-Restoration - at the University for Continuing Education, Krems, Austria.

### **Topics dicused in the workshop**

There are three different scales of events:

- Water coming from broken tubes
- Water coming from heavy rainfalls/river floods
- Tsunami

For case 1 and case 2 special measures to rescue books an archival material can be recommended, for case 3 a general country wide strategy where which material is stored is mandatory. A country wide evaluation could help understand which library houses what material and then all valuable material from the entire country should be brought to safe

places (a country wide strategy) as permanent storage. However this safe storage should not be central, as if then this central place is struck, for example by an earthquake, everything is lost. Decentralized but safe storage is recommended.

However also for the smaller events understanding the books and archival documents and their value is the first and in any case necessary step.

Sri Lankans Libraries and archives house documents and books made of a number of material.

- **Cellulose-materials** (paper, some textiles, some film material, Ola leaves, palm leaves, wood)
- **Synthetic polymers** (films, some book cover material)
- **Other organic material** representing a minor amount of text-carrier (silk, bone, etc. ) and a larger amount of writing/printing/drawing material (dies, inks, pigments, binders, glues), of which the texts and images are made.

All this material takes up water more or less readily and gives it off slowly or with an effort of energy-input. Paper becomes especially weak when wet. Therefore wet paper must be handled with utmost care.

Furthermore water can dissolve some inks and dies, binders and adhesives. Loss of text and dissolving of bindings can be the result.

Finally mould growth can be fostered by water respectively very humid environment. Mould does not only grow on the books involved, but also on the furniture and the walls, the library or archive itself.

Mould can cause allergies, some mould spores are toxic for anyone, even for people, who are not allergic. Furthermore mould decays paper to complete loss.

### **Small scale event**

Can be caused by:

Overflowed toilet or sink,

Whole in tubes, often not seen until mould infestation is visible. (water detector is useful device)

Fire sprinklers

Air conditioner

A small scale damage is considered when 2-6 people can handle the situation and normal work of the library is established after 8 hours latest. If more people are needed or the 2-6 people are your entire staff, the library should be closed until cleaning up is finalized.

Maximum 300 books may be involved. Either packing and freeze drying or air drying is appropriate measure.

First reaction:

Water must be stopped by shutting it off, the pipes etc. must get repaired and the area of the library dried out. Standing water must be removed.

It is advisable to have plastic sheets distributed in the collection – in case water is coming from the roof

Attention must be paid to mould outbreak, also from wet walls, carpets etc. even days and weeks after the immediate water is gone.

Who is needed to handle a small scale water damage:

- Disaster response team
- The department's staff
- Facilities maintenance personell

After the disaster is over – look at the disaster plan again and see what had worked well and what needs revision. Inform the staff about possible changes for the better.

### **A medium scale damage**

A medium scale damage is considered when more than 6 people are needed to handle the situation.

**Source:**

- heavy rainfalls,
- leaking tubes where water came out over longer time and the water is standing on the floor,
- water against fire,
- tornados, floods etc. involving the entire city or area.

In any case freezing is the proper response. External help is needed to do this.

Who is needed:

- Disaster response team
- All staff
- Facilities maintenance personell
- Security
- External aid

After the disaster – look at the disaster plan again and see for the strong and for the weak points. Discuss them with all people involved and modify the plan accordingly. Publish the experience in professional publications.

**Large scale event**

Cooperation with the government is mandatory – For tsunami prevention please see also publications by Prof. Dr. Hajo Neis and Srivarshini Balaji - [hajoneis@uoregon.edu](mailto:hajoneis@uoregon.edu) and early warning system: <http://www.hewsweb.org/hp/> **Please see the file “UP AND OUT” provided**

**How to make a disaster handling plan**

- For a first meeting in your institution/library/archive everyone who is important and who is interested should be invited.
- In the first meeting the idea of disaster - plan is introduced to the entire staff and staff members, who from then on proceed on specializing on the topic „rescue and emergency“ are chosen.
- They must have the skills and authority to develop a plan and perform it in the case of emergency.

Minimum is a team of

- A representative of the library/archive
- A representative of the local fire fighting unite
- A representative of the local safety unite
- Head of IT
- Conservator-restorer
- Technician
- Police
- Security
- A representative of the insurance company
- And the coordinator

The team first must understand the collection and the building, the structure of the staff and the local infrastructure. Furthermore the team also must understand the threat and analyze: “What had happened in the past and what might happen in future, for example due to the immediate and wider environment of the library or archive.” Simple questions can give a good start, questions such as:

- When was the last disaster?
- What happened? Was it men made or natural?
- Is the source repaired if man made or can it happen again?

- How was the response then?
- What can we learn from the past?

The next step is to really know the collection.

- To visit all parts of the entire library or archive with specialists of each section is advisable
- To know what is where and of which value the items are and what material they are made of is also mandatory for a plan

In the course of such visit first rearrangements can already be made, for example to remove books in case they are found exposed to problematic areas (for example valuable books under pipes with water or directly on the floor. etc..)

To define the values of the library or archive immediately, which is before the disaster is also advisable. (What does the library not want to lose? How much does it cost to replace this and that? What is unique and thus impossible to be replaced? Thinking in sections not in individual items is a help. What is the mission of the library?)

A first step could be:

- Bring together all heads of all collections in your library and ask them to define 3 value-categories. Mark them with 3 colours you before have designed for all Sri Lanka institutions. Communicate these colours with the fire brigade etc. For example red is very valuable material, blue is medium valuable and white is less valuable material. Additionally mark them with letters, as some people are colour blind.
- Make a floor plan on which you marked the shelves and items too and seal the plan in plastic against water so that people who enter the building in the moment of disaster can never the less read the information, which otherwise would be damaged also by water.
- Walk the fire brigade etc. through the collections and show them the valuable material together with a floor plan on which they are marked clearly before any emergency happens, so that they get acquainted with the interior of the library in a relaxed situation.
- Have a plan of the building in which the areas are shown. This plan must be available at all entrances of the library and at home at the persons who will be first helpers in case of emergency.
- To make such value estimation you should *walk through* the library to be sure to not forget something.
- Please do not forget: In concrete moment of emergency, material which you have as loan might represent a considerable value (keep this updated).
- While you walk through the damaged collection keep in mind
  - That some material is more vulnerable to water than others
  - Some should stay wet, some dry
  - And most need attention within 48 hours at latest
 Also note this in your plan before the disaster happens.

### Catalogue

A catalogue is the basis for the rescue plan of the collections, a help to reinstall the library work and a help to identify losses

- Keep it updated
- Backup it in a completely different library

### The building

- Get or make plans of the building(s) (flor plan with electricity and tubing)
- Where are doors, windows etc. for people to escape
- Where are the valuable books/archival material
- Where are the water sensitive books/archival material
- Where can the rescue equipment be stored?
- Define a meeting place for people who escaped the building
- Mark this place visibly and communicate it.
- Where can a truck drive close?

Establish a checking-schedule of the building (electricity, doors etc.)

- Emergency exits must be kept free
- Emergency exits must be marked

Bring together equipment needed

- Store it properly
- Lable it properly

An emergency box for water might contain the following items:

- Foliar to wrap books for freezing
- Signs to indicate that this area cannot be went in
- Torch
- Masks
- Rubber gloves
- Rubber boots
- First medical aid box
- Camera with batteries good for the next months
- Telephone
- Lite with telephone numbers
- Plan of the library
- Emergency plan in super short version
- Plastic boxes to carry wet books
- Plastic sheets to cover areas/books
- Bandage material to keep books in shape
- Pencils and paper in plastic bags to keep them dry
- Corrugated cardboard
- Water tube with soft shower head
- Pair of scissors

Decide on a person who is responsible for regular check of the box – are batteries working and not eaten by humidity (oxidation), did insects not eat up any elements...

Make regular exercises about how to react a water disaster and who is responsible what for

Do not forget that there might occur other disaster which needs for different emergency box

### Competences

- Decide who is responsible for what in case of emergency
- Who starts an alarm?
- WHO VERIFIES THAT POWER IS OFF WHEN YOU ENTRE STANDING WATER?
- Find a vice person for each and every obligation
- Make a telephone chain and disseminate it (also home numbers!!!!) possibly home mail address – work surver might be not working

- Advise personal and readers how to behave in case of an emergency and cooperate with local fire brigade, freezing company, hospital etc.
- Make emergency training at least twice a year (do not tell the staff ahead that it is a test)
- Check telephone numbers etc. on this occasion – are there new numbers? Have numbers changed?
- Etc.

-While you develop the plan and when it is finished, make the entire staff equanited with it.  
 -Ask for feedback  
 -Take into consideration this feedback of the staff – it might be valuable infromation from experience  
 - Modifie plan in case needed

### Volunteers

Check their abilities

- Professional background
- Physical strength
- Experience
- Reacability

Give the tasks according to the qualification

Advise them concretely and in detail

Get their telephone numbers on the telephone list

Bring them together for training events.

### Training

Make training with both staff and volunteers and readers on regular base

- Table training (siting around a table imagining situation and thinking it through)
- Real training (get up and act)

An alarm board should provide

- Short instructions also pictures
- Telephone numbers
- Plan of building and emergency exits

Beforehand concrete obligations must be defined

- Who alarms people (readers, staff, guests, neighbors) and how?
- Who evacuates people? And how and where to?
- Who takes first actions to evacuate books?
- Who leads personal during the evacuation of the books?
- Who makes the documentation of what books go where to (freezing, other storage are?)
- Who informs the insurence?
- Who makes documentation of the damage for the insurance?
- Who informs public/press?
- Who leads the team of conservators?

Please keep in mind that people in a shock situation do not react as in every-day life.

For each and every responsible person a vice person must be defined.

There are several other problems coming along with water event:

- Falling trees

- Broken infrastructure - Flooded streets
- If we speak of water to distinguish fire, fire damage
- Staff not coming (who is taking over whoms originally planned obligations?)
- Snakes coming out the ground

Emergency is there – what to do?

- Remain calm
- Do not take riskful actions
- Do not entre building without the ok of someone who understands statics.
- **Rescue people**
- Understand reason for emergency; estimate dimension and document the event (photos)
- Reduce dimension of event if possible (shut main water supply in case of flood from broken tube) – and eliminate secondary risc like electricity short cuts by switching off power – think of following lack of power for example no elevator, no light)
- Inform director and alarm the team (alarm plan)
- Give out special clothing from emergency box to arriving helpers.
- Take emergency plan and reread it to call it back into memory. And act according to it.
- Have the damage assessed by 2 and 2 people – never send in people alone and equip them with hard hat, gloves, masks , ear protection against mould and rubber boots as well as mobile and tourche as minimum equipment) make them report along pregiven questioners. Make them come together and report so you get an overview over the disaster.
- Initiate evacuation of books.
- Inform place where dry books can be brought to. Organize transport of books
- Insure that helpers have access to food and toilets

The minimum equipment for those who entre the building to understand the condition of the books is:

- Minimum equipment
  - Hard hat
  - Gloves
  - Masks
  - Mobile phone
  - Tournch
  - Sticks
  - Rubber boots

Always teams of 2 people – not alone

Look **first** for the **most valuable material**. The selection what material this is, was made by specialists in the team when the disaster response plan was made. If these most valuable material is wet – bring it to special conservators.

If your library/archive has small number of staff **contact other libraries for help**

**Remove standing water**

**Note down categories of damage** in the floor plans for better organization of further recovering procedures

**Note also broken floors, ceilings, roofs etc.**

Drying

Freeze dry is the only appropriate reaction to dry large quantity of books:

The books are prepared in the following way:

- Packed in plastic boxes, not cardboard – cardboard gets wet and soft and the books fall out
- Wrap the books in plastic kitchen foil
- Pack them spine down
- Do not stuff the boxes extremely
- Large books are layed down flat
- Do not put books on top of others, better leave space in the box which is stuffed with news paper
- Label the boxes on the sides.

Freeze drying is based on the fact, that ice transforms immediately to water as gas.

A very small number of books may also be air dried.

Then they are first blotted from the large amount of water and then positioned in a wind flow. Mould growth must be avoided by fast enough drying.

Cleaning

Cleaning may be performed before or after drying

Freeze items if the books are

- Fragile from water-uptake
- Dirt has already dried
- Large quantity few helpers – buy time

Clean fist if

- Dirt still wet and loose
- Construction of the book still stable

Cleaning can be made with a gentle water flow either from a shower head or a wash bottle.

## **Conclusion**

Finally it must be taken into consideration that it might be easier to buy some books again than to dry and restore them.

3 scales of water – disaster - - we should try to mitigate the damage from all events no matter what dimension by having a plan

Making a plan is never too early – the plan must be kept updated and tests must be performed on regular basis.

The plan is individual for each and every library/archive/ etc. and therefore – on the ground of a general structure – needs to be made by local people who know the individual library/archive/ environment/infrastructure best.