

# Fire: Warning of Impending Disaster

by Dr Nizamuddin Ahmed,

The recent spate of fire incidents in the city is but a warning of impending disaster. Five female workers died and at least 30 others were injured on 11 February 1995 at the Prostor Garments, Mirpur. Bata and Fuji shops on Elephant Road were charred by fire on 24 November last year. Earlier last year nine persons died in the ill-fated fire at the Sandia Transport counter at Fakirpool. The list is becoming unpalatable. Despite the number of fires and the fatalities, the general response to the threat of fire continues to be of total indifference.

In spite of our total disregard, indeed disrespect, to fire and considering the prevalent general ignorance, the potentiality of a fire starting, the lack of preparedness to tackle fire, etc. it is fortunate that casualties were not any higher. At this moment in time the management of the garments factories, industries, the cinema halls, the lavish offices in high-rise buildings, the shopping centres, etc. suffer from a degree of complacency that could soon prove to be suicidal.

Traditionally interiors of urban buildings were of non-combustible materials. Further, being dependent on natural ventilation, the circumstances did not usually permit the spread of fire internally, nor did a fire have the scope to develop rapidly in magnitude so as to affect the inmates.

However, recent trends show that the use of combustible materials for interior decoration is increasing, and that more and more spaces are becoming air-conditioned. Windows which were once open for ventilation are now closed, thus increasing not only the possibility of a fire developing, but the enclosed situation also contributes to jeopardizing escape of affected persons.

Escape will also be severely hampered because the number and width of exits are decreasing due to overzealous and stringent security measures in most buildings. It is common in almost all the garments factories of the country to keep only about 24 inches of the outermost collapsible gate open for reasons of security. The same could spell death. The five victims at Prostor Garments recently, the sixteen victims of Saraka Garments (Mirpur 1990) and the nine victims at the Sandia Transport counter (Fakirpool, 1994) were all prey to lack of adequate escape facilities.

It is not uncommon in Bangladesh for occupants to light up cigarettes or dispose ends in these enclosed boxes; thus increasing the risk of fire. Overloading power lines, erratic electrical wiring, poor maintenance, etc. and increased use of electric equipment have also added to the problem.

Fire should now be considered with increasing seriousness because we are now housing more people in a building, our cities and its buildings are becoming more congested, we are using more combustible materials for our interiors, and of course, our carelessness with electricity, smoking habits, inflammable materials, etc. are pathetic. But, perhaps the factor that overrides all others is that building owners have driven security to a point where its has become a hazard to the safety of the inmates.

Unless precautionary and preventive measures are taken urgently, the possibility of a major fire in any of our buildings is just a matter of time. The probable causes of fire are:

- Careless use of heating appliances in kitchens, factories, tea-rooms etc.
- Lighting naked fire inside the building for smoking, cooking, etc.
- Defective/improperly installed and operated electrical equipment/services
- Poor or no maintenance of electrical installations
- Careless smoking habits and careless disposal of butts
- Heat-generating manufacturing processes
- Unauthorized storage/handling of flammable/explosive/com-bustible materials

Once ignited, fire in any large space such as factories, cinema halls, shopping centres, etc. may reach an unmanageable magnitude because of the following reasons:

- Excessive burning due to combustible finish materials and the contents
- People ignorant about behaviour during a fire will panic. If the assemblage is in a congested and/or dark space, and on the upper floors of a building the casualty will be heavy e.g. cinema halls, garments factories in multi-storied buildings, etc.
- Means of fighting the fire at its early stage lacking

As panic-stricken people flee the affected area, efficient fire fighting will be hampered due to:

- No trained in-house personnel to operate extinguishers/take charge

quate means of escape (as in both the above cases).

Smoke can obscure vision, induce panic by hindering breathing and compel inhalation of toxic gases. Experts are convinced that most of the people killed by fires in buildings have first of all failed to find an exit because of smoke, and have later been poisoned by carbon monoxide gas or suffocated by lack of oxygen.

The success of Means of Escape in case of fire depends totally on finding alternative escape routes when other exits have been blocked. Unfortunately most buildings in Dhaka or for that matter Bangladesh have only one route through which the affected people can escape. Or can they?

People may die if they are unable to escape to a place of safety, which in all cases will be the open sky, within a stipulated time of 2.5 minutes. However, it is always desirable to provide for evacuation of the fire-affected part of a building within the shortest possible time. Considering 2.5 minutes as the maximum allowable time for escape, it is calculated that hundreds of innocent people will be trapped for longer periods inside any garments factory, cinema hall, shopping centres, etc.

Failure to find an adequate means of escape during a fire has always been the major cause of death in a fire. In cinema halls, garments factories, etc. the only collapsible gate of the Main Entrance remains either locked or half-open. The search for the gate attendants having the key during a fire could spell disaster.

That is exactly what happened in Mysore's Premier Studio on February 8, 1989 during the shooting of Sanjay Dhan's TV serial The Sword of Tipu Sultan. The set caught fire while a firecracker scene was being enacted, the studio gate was locked to keep away members of the public, the darwan had the key, he fled the scene and 40 people died inside the studio, 20 later.

The only exits (main Entry) from cinema, garments factories, high-rise office buildings, etc. are kept constricted. In most building types the number of gates are reduced to a minimum to save manpower. The width of doorways, main entries, etc. are hopelessly inadequate to facilitate the escape of all persons affected by fire within the stipulated time. The distance one needs to travel to reach a place of safety is another criterion of good planning for fire protection. In a congested situation like that of a cinema hall, garments factory, shopping centres, etc. people may be expected to travel a distance of 12 metres per minute. Thus everyone should be within 30 metres (the distance that one can travel in 2.5 minutes) from an exit door to a place of safety.

It is common for people to light up cigarettes inside cinema halls, flick ash and butts on the floor/carpets. On 10 February, 1995 the lightman of the BDR cinema hall in Dhaka was stabbed by a group of young men when he had asked one of them not to smoke inside the hall. No smoking signs are displayed, graphically and in Bengali, occasionally in English, in many buildings. However, such signs are ignored and are not usually observed. Unless, people are strictly barred from smoking inside high-risk areas, the risk of a fire from this common source will loom large.

Although each building type may have special requirements for fire protection, emphasis at design stage should focus on the following, (not exhaustive):

1. Capacity: To determine number of doors, size of exits and lobby, etc.
2. Layout: Distance to exit should meet standards; congestion may impede escape.
3. Finish materials: determines how much will burn.
4. Means of Escape: Ensure that every person can escape unaided to the open air within 2.5 minutes of starting a fire.
5. Number and location of



Distraught parents of a garment worker who died in the fire. Simple safety precautions could have avoided this tragedy.

By even a modest estimate, it is most likely that two to three hundred people will die if there is a large fire inside a cinema hall. In some cinema halls it will take 10 to 15 minutes for all the people to be evacuated through the existing doors, calculating on the factual basis that half of the width of each door in use is kept open. The aftermath will be gruesome if there is a fire in the middle of a show because the main entry is always locked in almost all the halls.

The outcome of a fire inside a garments factory will not be any different. Large assembly of workers without fire drill, congestion, insufficient passage space between machinery, unplanned layout not conducive to easy escape, inadequate number and width of doors, absence of alternate floors, lack of fire-fighting equipment etc. are the principle causes why hundreds will perish in a large garments factory fire.

The current situation existing in most public buildings and factories in Bangladesh will trigger off a predictable sequence of events. It is possible for a fire to ignite inside any of the buildings for that fire to develop into unmanageable proportions, for people to panic (even due to a small

fire), for a large number of people to faint owing to the smoke, and for a large number of people to be trapped inside the space that is on fire. There will be no one to take control of the situation because no one is trained for such an eventuality, the Fire Service will be difficult to contact and the Fire Service personnel will never be on time to save anyone.

In a country where water for toilet facilities is in short supply it needs no research to foretell that water will be in dire shortage in any building during a fire. Although all fire cannot be suppressed without the assistance of other types of extinguishers such as Carbon Dioxide, Dry Powder, Foam, etc. is equally critical.

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## Food Agency Wins a Last-Minute Reprieve

By Andrew Lycett Rome

When oil producing nations were flush with money, the International Fund for Agricultural Development was heralded as an innovative way of financing development. Today the dream has faded, reports Gemini News Service, Washington cannot decide how much to contribute, and the organisation is fighting for its life.

The change reflects the realities of global economy. Although members of the Organisation of Petroleum Exporting Countries (OPEC) were major players in the world economy when IFAD was started two decades ago, their influence has waned considerably in recent years.

While the Southern bias in the running of IFAD has not been completely lost (developing and OPEC countries together still have a majority on the Governing Council), the Fund now looks more like any other international funding organisation.

And the final conclusion of funding negotiations remains far off because Washington has still not committed any funds. US delegates at the Governing Council meeting said nice things about the organisation but were tight-lipped about money and the attitude of the new Republican-dominated Congress towards the Fund has yet to be gauged.

The logjam was broken only when European countries guaranteed to provide \$420 million irrespective of what Washington decides.

This is something of a gamble because the mood on Capitol Hill is not well-disposed to small organisations like IFAD, the work of which, right-wing ideologues argue, could be done by other agencies, such as the World Bank.

If the US turns its back on IFAD, Europe will have to come up with all the \$420 million it has promised. That might be a tall order when most aid budgets across the industrialised world are in decline.

Nevertheless, IFAD's supporters have plenty to be positive about.

## Improving the Livestock for Greater Productivity

by Rashed un Nabi & Dipak Mukherjee

LIVESTOCK is the important resource in the agrarian economy of Bangladesh. Although it does not provide employment directly it supports the whole agricultural process on which nearly 85% of our rural population depend for their survival. Cows and buffaloes support the critical stage of agriculture, i.e. land preparation and poultry helps the poor households budget crisis in many ways.

Interestingly, a few number of cattle are raised in commercial or specialised operations while most of the cattle are kept at the farm household in small numbers (Livestock Survey 1987). Nevertheless livestock receives a low institutional support compared to agriculture which witnessed many revolutionary changes in the last 2 or 3 decades. On the other hand livestock sub-sector has drastically declined over the same period. As a result, per capita availability of animal protein from livestock source declined to 1.82 gm from 2.03 gm in 1977 - 87 period.

The major constraints of livestock development include the absence of renovation of traditional management, low-cost technology and above all, timely extension service to the farmers living in the rural areas.

The System Research Division (SRD) of Bangladesh Livestock Research Institute (BLRI) released its Final Report on Collaborative Livestock Research and Extension Programme between BLRI and Proshika (compiled by Dr Mafizul Islam and Nathu Rain Sarker, 1991 - 1993) recently (published in June 1994). The report contains the findings of the collaborative research projects that dealt with techno-economic aspects of beef fattening, milk cow rearing, goat rearing, improved chicken and duck rearing and disease control of poultry birds.

The report correctly began with the foreword that "orthodox management practices of the farmers" and "limited outreach infrastructural facilities of the extension department" inter alia are the major technical and institutional problems in the livestock sector which need a breakthrough collectively by researchers and development workers at the village level.

The collaborative experiment between BLRI and Proshika was designed with a view to establishing feedback mechanism between Proshika (and other NGOs) and the research institute; while the former is better equipped to deliver service and disseminate service at the interior areas, the latter can provide information to NGOs (like Proshika) about the nature of new technologies and identify the areas where the technologies can be adopted.

Nine research projects covering issues of a wide variety

were jointly formulated by BLRI and Proshika. The projects were implemented by local-level or marginal group members of Proshika. Livestock personnel of Proshika and BLRI research staff supervised and monitored the projects intensively. The projects are:

Beef fattening under improved management, production performance of milking cow under improved feeding and management; goat rearing under stall fed and scavenging condition; poultry bird rearing under different feeding and vaccination and disease control.

Singair centres, another study on stall-fed goat rearing was conducted involving 8 group members of Proshika. Four of them were provided with 5 goats to rear under stall-fed and other 4 with 5 goats each under scavenging condition. The latter was allowed to graze for 7 hours and the former was only 2 hours but given supplementary feeding consisting of concentrate mixture composed of wheat bran, rice polish and oil cake. Weight gained under stall-fed condition was significantly higher than scavenger goats. Goat reared under stall-fed condition provided 75-110% increased income



over the scavenging system.

Other research projects on duck rearing successfully explored the rural adaptability of technology adoption. Duck rearing project under scavenging condition revealed a strong seasonality in egg production; egg production had been highest in the 3 paddy harvesting seasons (aus, aman, bore-IRR). On the other hand supplementary feeding yielded a high growth performances of *Khaki Campbell* ducklings. Another project on vaccination revealed that regular vaccination of poultry birds can effectively reduce morbidity and mortality of ducks, while proper vaccination can check duck cholera and plague.

Most of the projects were carried out in the low lying areas of Netrokona district.

The successful completion of these collaborative projects has kindled hope among the group members of Proshika and the BLRI. Proshika now contemplates to replicate the above projects with a high profile.

The project has increased productivity, minimised cost and developed a number of appropriate technologies and management process. The project was proved successful in collaborating between research institute like BLRI and development agency like Proshika in development and transfer of sustainable and location-specific system based technologies for the well-being of poor farmers. Now the responsibilities lie with the BLRI to disseminate the findings to the common villagers at all level and all areas.

The writers are working with Proshika.

- \* 11. Addition and/or alteration has been made to the building since receiving planning permission, either structurally or with regards to finish materials, number of exits, size of exits etc.
  - \* 2. Number of users has increased
  - \* 3. Accumulation of rubbish can be ignited
  - \* 4. People are observing "No Smoking signs"
  - \* 5. In-house staff has been trained to take charge and operate fire-fighting equipment
  - \* 6. Fire drills involving all the users are held at least twice a year
  - \* 7. An assembly point within safe distance, sufficient to accommodate all the users, has been earmarked and displayed as such
  - \* 8. The condition of extinguishers, sprinkler system, hose reels, etc. meet safety requirements
  - \* 9. Requisite number outlets are in operation for timely escape by all persons:
  - \* 10. Passage, corridors, lounge, lobby, foyer, are clear of furniture, rubbish, etc.
  - \* 11. New materials have increased the risk and/or magnitude of fire
  - \* 12. The telephone number of the Fire Services is noted and the telephone system is reliable and a accessible to the staff during any emergency.
- In conclusion, it can only be re-emphasized that in order to ensure good fire safety practice every building should take the following measures:

1. restrict the possibility of a fire by appropriate design,
  2. take sufficient precautionary measures so that the possibility of a fire starting is minimized,
  3. ensure that every individual can escape unaided to the open air/safety within 2.5 minutes,
  4. install requisite fire-fighting equipment
  5. train staff and organize regular fire drills
- Unless such organized measures are taken, the management will have none to blame but themselves when indeed a disaster will strike. Depending on the building, the type and location of the fire, it is possible that casualty figures may be high enough to make international headlines. Surely, we should strive to avoid that.

## Towards Self-Reliance

Aasia Begum (40) tells her own tale — from distress to development through group effort



fourth a cow at Tk. 4,500/- This time, suddenly, six of my hens died. From the total 30 hens 24 survived. I again purchased 10 hens with Tk. 1,000/- and the number of my hens became 34. This year the cow gave birth to a calf. The overall condition of my family went on developing with sale of milk and eggs. My cow gives three litres of milk everyday. From it I sell two litres and the rest I keep for consumption of my children. In six months of the last year I earned Tk. 6,000/- from sale of milk. The total expenditure through the whole year for the cow was about Tk. 2,000/- Excluding the expenses the profit was about Tk. 4,000/- After repayment of all instalments of the previous loan I again received a credit of Tk. 4,000/- As rearing of milch cow seemed to me more profitable, I purchased another cow.

I am benefited from every side through proper utilisation of credit received from ASA. The greatest benefit I derived from my involvement in the group was treatment of my husband's illness. To cure him, I had to spend a considerable amount of money.

My income combined with that of my husband ensured our children's education. One of my daughter reads in class IX. Her educational expenditure is met with my earning. I wish that she should continue her studies so that she could get an educated groom. She herself would also be able to do something with her own effort

Besides all these, I maintain a regular personal savings according to my ability. As I do not think of remaining dependent on an organisation for a long time, I want to improve my financial condition. I am determined to become self-reliant.

I received Tk. 3,000/- as credit for the 3rd time. Now adding to it the surplus amount the total amount in my hand was Tk. 5,800/- I consulted with my husband and

first time and started a mini poultry in my house. I purchased eight hens from the farm at Tk. 800/-. With the rest Tk. 200/- I met the expenses for conveyance, buying bamboo for making the cage, food and injection for the hens. Initially I faced difficulty to manage everything. Afterwards, I myself learnt everything regarding how to take care of the hens. In the whole year I earned about Tk. 3,500/- from sale of eggs. For rearing the hens I had to spend about Tk. 1,500/-. I repaid Tk. 1,150/- through weekly instalments to clear up my credit amount with 15% service charge and also deposited Tk. 200/- as savings at the rate of Tk. 4/- a week. That is my total expenditure was Tk. 2,850/- Excluding all the expenses I made a profit of Tk. 650/-

After repayment of all the instalments of my credit I again received Tk. 2,000/- from the organisation. Adding the amount saved from the

previous business with the new credit amount, I made a capital of Tk. 2,500/- and the total amount I invested again in my poultry business. I purchased 22 hens at Tk. 2,200/- The total number of my hens became 30. During this year I got about 20 eggs daily on average. I sold each egg at the rate of Tk. 2/- and thus at the end of the year my total income came to about Tk. 14,500/- In the whole year my total expenditure was about Tk. 9,500/- and excluding the expenses Tk. 5,000/- remained in my hand. I deposited Tk. 200/- in the group as weekly savings. Moreover, about Tk. 2000/- was spent away from my account for treatment of my ailing husband. However, excluding all such expenses I possessed a surplus of about Tk. 2,800/-

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