

ENVIRONMENTAL HEALTH IN RURAL AND URBAN DEVELOPMENT AND HOUSING

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A CASE STUDY OF HEALTH IN HOUSING

**Access to life-saving services in
Rio de Janeiro, Brazil**



WORLD HEALTH ORGANIZATION

1987

{ 827 BRR187-6462 }

bn 6462



WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTE

DISTR.: LIMITED
DISTR.: LIMITEE

PEP/RUD/87.2
ENGLISH ONLY

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Rio de Janeiro, Brazil

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ISBN 6462
LO: DAF BR. R187

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A. INTRODUCTION

1. Name and duration of programme

The General Co-ordination of the Civil Defence System of the City of Rio de Janeiro (COSIDEC). Under the Town Hall of the Municipality of Rio de Janeiro. (Duration not known).

2. Contact person

Luiz Edmundo Costa Leite, Municipal Secretary, Rio de Janeiro, Brazil.

3. General objectives of the programme

To provide disaster and emergency services, defined as promoting the return to previous conditions of housing and services after a disaster or emergency. Also to promote conditions which will prevent future accidents.

Specific objectives are to provide a geotechnical service to respond to and prevent slope accidents (caused by hillslides) and to extend the urban cleaning public services to slums or illegal settlements.

4. Main health problem(s) tackled

Accidents through hillside collapses. Accidents from fires from uncollected garbage. Epidemics due to an increase in the number of rats, mosquitoes, cockroaches and other vectors in the garbage heaps.

5. Programme area

Rio de Janeiro, slums (favelas).

6. Characteristics of the area

Rio has developed between the sea and the mountains. Its population is about 6 million. 1.5 million of these live in slums. Out of the 450 slums in Rio, 180 are located on slopes and 270 are located on the seaside, riverside, channels and drainage ditches.

Slopes are occupied by those migrating from the poorest regions of the country. These people do not have the money to build their homes in accordance with basic engineering standards. The slums offer no resistance to summer rains and there are problems of garbage being thrown down the slopes, swine raising in high population density areas and unsuitable disposal of excreta and waste water.

7. Target coverage and actual coverage

Target coverage: 1,000,000 inhabitants
Actual coverage: 300,000 inhabitants

8. List of agencies/ministries involved

Municipality of Rio - five departments, ambulance service, police, social workers, town hall sectors in charge of sewers, streets and roads, COMLURB (urban sanitation department).

B. MANPOWER

1. Manpower involved

4 decision making officers
1 general co-ordinator
1 administrative assistant
1 operations assistant
1 support assistant

Telecommunications team

2 typists
3 vehicles

2. Training involved

Training in first aid and fire control is given.

C. COMMUNITY PARTICIPATION

After an accident several groups often collide in attempts to make their interests prevail. The government agencies try to prevail; former community leaders (not always representative) try to maintain power; alleged owners attempt re-possession; builders look for the liberation of lots in order to sell them; politicians try to woo potential voters; religious institutions try to influence; technicians attempt to experiment with new technologies. Thus, victims' interests get lost.

However the programme attempts to use education programmes in schools and volunteers to emphasize the prevention of environmental accidents. There is also a training course (5 hours long) for interested members of communities.

D. INTERSECTORAL LINKAGES

Agencies involved are provided above in section A8. No information is available on quality of relationships between sectors. There is also a group for coordinating the activities of NGOs and government.

E. COSTS

Annual budget is CZ \$5,000,000.

F. ACTIVITIES

COSIDEC provides assistance to an average of 2000 cases per year. Appendix 1 gives the 'occurrences proceeded to' by COSIDEC in 1985. There is a special system for handling complaints of hillside accidents. Requests for inspection of potential hillside accidents are followed up by a technical inspection and a report. If a disaster is imminent residents are removed. COSIDEC may get other municipal departments to carry out immediate services like garbage removal, cleaning ditches etc. If the lot is privately owned the responsible owner will be requested to take action. Stabilizing projects may be prepared for publicly owned areas. A budget is often prepared for submission to the Secretary of Public Works.

Preventive work also includes campaigns and teaching in schools.

Garbage collection is also undertaken as a disaster prevention. In Rio the following systems of garbage collection are used in slums:

- a) Collection in the periphery using compacting vehicles.
- b) Use of stationery containers of the "Brooks" type, measuring 7m^3 , in which the people can deposit their garbage. These are only used in areas where traffic of medium-sized vehicles is possible.
- c) Auxiliary systems.
 - Gutters - for hillsides that slant sharply.
 - Baskets - for manual garbage removal.
 - Canvas sheets - for individual garbage removal.
- d) Collection with microtractors.

These are small tractors, easy to manoeuvre and capable of handling sharp slopes, to which a small cart - 1.6m^3 capacity - is coupled.

The microtractors can reach higher spots within the slums allowing a substantial increase in collection capacity, not only in regular collection in places they ride through, but also because they reduce distances for manual collection in inaccessible areas. Microtractors can be very useful in emergency situations, transporting people, rescue equipment, etc.

For a slum population of around 1,500,000 COSIDEC estimate a daily garbage production of 750 tons (0.5 Kg/person/day). Of this total, 340 tons/day (50%) are collected, leaving 50% still accumulating on the slopes.

Microtractors are responsible for collecting 45 tons/day. (There are 35 in operation). Although this represents only 12% of the total collected, one must remember that this garbage is collected on the highest spots, where the potential risk of a slide is very high.

- e) Animal transportation - Mules.

For garbage collection on the highest spots in the slums, inaccessible to any kind of vehicle, COMLURB has recently started to experiment with mules.

Two mules are being used, and in the training period they are each making 4 trips/day, totalling 2.5m^3 of refuse removed. It is estimated that after the training period the mules will transport 400 litres/trip and will make 7 to 8 trips/day, collecting around 6.0m^3 of garbage per day.

G. ORGANISATION

1. Structure

Rio is politically divided into 30 Administrative Regions. Each Regional Administrator is in charge of organising and coordinating the regional systems of Civil Defense. Tied to the Administrative Regions are Civil Defense Community Nuclei (NUDEC), the community organisations. The General Coordination of COSIDEC is subordinate to the Works and Public Services Municipal Secretary who, in turn, reports to the City Mayor.

2. Problems

The physical and mental efforts made by COSIDEC'S coordinators and assistants means that there are often cases of illness due to fatigue. This is mainly due to understaffing. COSIDEC needs a larger structure so that more attention may be given to the preventive and social aspects. COSIDEC feels that the most active phase (out of preventive, help, aid and rehabilitation phases) is the help phase. There is not enough preventive work and there is little forward planning, for example, the summer rains, which cause the highest number of victims, is cyclic yet never anticipated.

H. OUTPUTS AND IMPLICATIONS

1. Empirically noted health effects

None.

2. Health problems avoided

Accidents from disasters (eg hillside collapses). Infectious diseases from vectors in garbage dumps.

3. Lessons

A useful attempt at true inter-sectoral coordination under the umbrella of a municipality. Under-staffing means that insufficient preventive work can be done. Many innovations are necessary to respond to a variety of disasters, eg. the slum inhabitants themselves transport the emergency equipment, thus improving community participation. Sometimes expensive and sophisticated equipment, such as helicopters, is used to reach victims in a very short time. On the other hand, animals, such as horses, are used for the transportation of construction material for geotechnical works.

I. EVALUATION

This case study is a good example of:

- | | |
|-------------------------------|-----|
| a) community involvement | No |
| b) intersectoral coordination | Yes |
| c) sustainability | Yes |
| d) transferability | No |
| e) cost-effectiveness | No |
| f) appropriate technology | Yes |

APPENDIX I

RECORDED OCCURRENCES YEAR 1985

OCCURRENCES ACCEPTED BY COSIDEC 2868

TOTALS ACCORDING TO TYPE OF OCCURRENCE:

Building collapses	35
Partial building collapses	168
Threats of building collapses	411
Cracks and/or infiltrations in buildings	606
Landslides	373
Threats of landslides	156
Fall of retaining walls	51
Threats of fall of retaining walls	81
Rock slides	77
Threats of rock slides	291
Tree falls	22
Threats of tree falls	49
Floods	100
Complaints about essential services	446
Interdictions	325
Displaced persons	4540
Victims	
Dead	40
Injured	33

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