

HEALTH HAZARDS OF THE RURAL ENVIRONMENT

In the developing world, the environment in urban areas is generally better controlled than the environment in rural areas where pollution goes on unabated.

Legislation aiming at the provision of an environment conducive to promoting healthy physical and mental development is enforced in towns but generally neglected in the rural areas. In the rural areas enforcement officers are not available in sufficient numbers, the population is uncooperative because of illiteracy and the funds necessary for development are insufficient. All these factors, added to which are traditional habits and superstitions, make the life of the peasant hard and hazardous.

THE CHALLENGES FACED BY THE HEALTH TEAM ARE NUMEROUS BUT, WITH TACT, KNOWLEDGE AND PATIENCE, THEY CAN BE TACKLED SUCCESSFULLY.

5.1 HEALTH HAZARDS WITH WHICH THE HEALTH WORKER HAS TO DEAL

Every situation presents its own hazards and in this Manual it would not be possible to deal with individual situations. The general hazards to which a rural community is exposed include the following:

1. Hazards outside the home such as bad roads, collections of refuse, breeding of disease-carrying insects and vermin, stray dogs, unprotected water collections, unhygienic eating places, or unprotected electrical installations.
2. Hazards in the home such as open fires, sharp implements, overcrowding, badly constructed houses, unhygienic food and water storage arrangements, insanitary latrines, or uncontrolled disposal of waste water and solid wastes.
3. Hazards in the fields such as accidents related to the use of agricultural tools, snake bites, scorpion stings, diseases related to the use of pesticides, or diseases related to contact with plants and pollens.
4. Hazards related to cottage industries such as accidents with machinery or health hazards to potters, weavers, and dyers.
5. Hazards related to traditional habits such as those connected with the collection of animal wastes for household use, or hazards related to the breeding of livestock.
6. Hazards related to lack of education about healthy living such as poor personal hygiene or wrong food habits.
7. Hazards related to poor medical facilities such as lack of trained personnel, dispensaries and drugs.
8. Hazards related to poverty such as malnutrition, lack of shelter or inadequate protective clothing.

5.2 HELPING THE COMMUNITY TO OVERCOME THE HEALTH HAZARDS OF THE RURAL ENVIRONMENT

You, as a health worker, have been trained to be able to cope with most of the hazards of living in a rural environment and the community will rely on you to a great extent to promote healthy living and development.

USE YOUR KNOWLEDGE AND SKILLS TO THE BEST ADVANTAGE AND DO NOT HESITATE TO ASK YOUR SUPERVISOR'S ADVICE AND THE FEMALE HEALTH WORKER'S COOPERATION WHEN NECESSARY. REMEMBER THAT YOU ARE WORKING AS A TEAM WITH A COMMON GOAL AND YOUR ACTIVITIES MUST BE DEVELOPED AS A TEAM.

5.2.1 HAZARDS OUTSIDE THE HOME

1. Bad Roads: While the improvement of roads is not the responsibility of the health worker, as a community worker you can help in motivating the community to improve their own roads to reduce the risk of accidents, as well as to improve communications.

In Chapter 13, 'Accidents', you will find instructions on how to deal with accidents.

2. Collections of Refuse: In many rural areas refuse is composted for use on agricultural land and the collections of refuse outside houses may be limited. However, it still happens that refuse is moved from the house to an open place near the village, because of lack of facilities for transporting the refuse to a safe distance away from houses.

Your duties as a health worker in this case are enumerated in section 6.4.

VILLAGE LABOUR MAY BE REQUIRED TO HELP YOU RENDER REFUSE COLLECTIONS SANITARY. IN THIS CASE CONSULT THE COMMUNITY LEADERS AND TRY TO GET VOLUNTARY LABOUR FOR THE COMMON GOOD OF THE COMMUNITY.

3. Breeding of Disease-carrying Insects and Vermin: The breeding of flies and rats is closely connected with refuse disposal, both outside the house and on the house premises. This breeding must be reduced or preferably completely prevented if diarrhoea, plague and typhus fever are to be kept under control.

REMEMBER ALSO THAT RATS ARE VORACIOUS FOOD EATERS AND CONSUME VALUABLE FOOD WHICH THE COMMUNITY NEEDS. WHAT THEY DO NOT EAT THEY SPOIL BY THEIR URINE AND FECES RENDERING LARGE QUANTITIES OF FOOD UNFIT FOR HUMAN CONSUMPTION.

IN THE FACE OF THE HAZARDS OF MALNUTRITION, THE RAT MENACE ASSURES EVEN GREATER IMPORTANCE.

Proceed as follows:

a. Fly Control

- i. Ensure that household refuse is hygienically disposed of both in the house and on a community basis (communal refuse should be burnt or buried).
- ii. Ensure that sanitary latrines are used for the disposal of human excreta.
- iii. Ensure that animal excreta is disposed of in a sanitary way.

See section 6.3 for details.

b. Rat Control

- i. Ensure the proper disposal of household refuse and communal refuse tips (communal refuse should be burnt or buried).
- ii. Store the food in rat proof containers.
- iii. When the rat population grows to considerable proportions, call upon your supervisor to arrange for trapping or poisoning rats.

REMEMBER THAT RATS GO IN SEARCH OF FOOD AND IF FOOD IS NOT AVAILABLE THEY DESERT THE PREMISES.

c. Mosquito control

The breeding habits of the malaria mosquito (*Anopheles*) and those of the mosquito (*Culex*) that carries filariasis differ. The former breeds in stagnant or slow moving water in natural habitats and the latter in stagnant water in artificial habitats.

The malaria mosquito breeds in stagnant or slow moving water, wells and other collections of water outside the house. These will require:

- i. to be emptied if the collections are small, e.g., holes in the road or by the roadside;
- ii. to be treated with malarial or other larvicides if the pools are large;
- iii. to be removed by filling in or complete removal, e.g., holes in tree trunks must be cut so that water will not collect in them;
- iv. to be irrigated if the collections are at the side of streams.

The filaria-carrying mosquito breeds in tins, old car tyres, water tanks in houses and other man-made water collections. These will require.

- i. to be emptied and turned upside down so that water cannot collect in them;
- ii. to be completely removed;
- iii. to be treated with malarial, if the containers are too large;
- iv. to be covered so that mosquitoes cannot enter them.

4. Stray Dogs: Stray dogs abound in villages and rummage for food around human habitations. The biggest hazards they pose, besides biting people who disturb them, is the hazard of rabies. Rabies is a very serious virus disease which affects the nervous system, and once the signs and symptoms of the disease are established death is certain.

THE ONLY WAY TO TACKLE THE PROBLEM OF RABIES IS TO PREVENT IT. THIS CAN BE ACHIEVED ONLY BY IMMUNIZING ALL DOGS AGAINST RABIES OR DESTROYING ALL STRAY DOGS.

Proceed as follows:

- i. If a person has been bitten by a dog, take the precautions enumerated in section 18.12.
- ii. Report to your supervisor the presence of stray dogs in your area, especially when their numbers become uncontrollable.

IT IS THE DUTY OF THE HEALTH ASSISTANT (MALE) TO ARRANGE FOR STRAY DOGS TO BE DESTROYED.

- iii. Educate the community on the hazards attached to the presence of stray dogs in the area and elicit their cooperation to control this hazard.

5. Unprotected Water Collections: Unprotected water collections can be used for drinking purposes or are simply rain water collections. Both present hazards to health, the former in the spread of intestinal diseases and the latter as breeding places for mosquitoes. The danger of children drowning in water pools is always present.

Your duties in relation to unprotected water collections used for drinking purposes are enumerated in section 6.1.7.

Your duties in relation to water collections which are a hazard through providing mosquito breeding sites are dealt with in section 5.2.1.

See section 20.9 on how to deal with a person who has drowned.

6. Unhygienic Eating Places: In many villages, restaurants and sophisticated eating places are not usually found as the people eat at home. However, tea shops where snacks are prepared usually exist. It is your duty as a health worker to keep a watchful eye on these places.

Proceed as follows:

- a. Take an inventory of all the tea shops in your area and chart them on the map at the subcentre.
- b. Make an initial inspection to assess the following:
 - i. the state of the building and whether it is hygienic or lends itself to the contamination of food;
 - ii. the source of the water supply and water used for the washing up of eating and cooking utensils;
 - iii. the types of food served;
 - iv. the apparent state of health of the food handlers.
- c. Advise the tea shop owners on how to improve conditions which are found to be below the required health standards.
- d. Make periodic visits to these shops to detect early deterioration in their practices and to ensure that the standards are maintained.

REMEMBER THAT THE TEA SHOP IS AN IDEAL VENUE FOR PASSING INFORMATION TO THE COMMUNITY AND THIS OPPORTUNITY SHOULD BE AVAILABLE OF WHEN HEALTH EDUCATION ACTIVITIES ARE BEING ORGANIZED.

7. Unprotected Electrical Installations: In many rural areas electrical installations are insufficiently protected and carry danger warnings which are of no use to illiterate people. They pose hazards of electrocution, particularly to children.

As a health worker, it is your duty to spot these hazards and bring them to the notice of the responsible authority.

See section 20.8 on how to deal with patients who have been electrocuted.

5.2.2 HAZARDS IN THE HOME

1. Open Fires: The use of open fires for cooking purposes, and in the winter for heating purposes pose hazards to health, particularly to children.

Whenever you come across an open fire in a home, bring to the attention of the mother the danger an open fire creates for children and the importance of keeping children away from unprotected fires.

If a child or any other person is burnt or scalded proceed as detailed in section 18.8.

IF COW DUNG IS USED FOR FUEL SHOW THE HOUSEHOLDS HOW TO BUILD A SMOKELESS CHULA UTILIZING COW DUNG FUEL.

2. Overcrowding: Overcrowding in itself creates hazards to health, especially in the spread of air-borne diseases and contact diseases, e.g., leprosy. In the rural area houses are not supplied with such ventilation, and moreover, what little is available is

blocked up for fear of thieves or wild animals.

As a health worker your responsibilities are to inform the community of the health hazards posed by overcrowding and advise on ways to solve them.

Proceed as follows:

- i. Educate the household on the risks of overcrowding in the homes and the way diseases are spread.
- ii. Take this as an opportunity to spread the family planning programme, if it is not already accepted in that particular household.
- iii. Educate the family on the special precautions which must be taken to prevent the spread of respiratory diseases, e.g., tuberculosis, especially to children, if any member of the family is suffering from such a disease.
- iv. Discuss the advantages of proper ventilation in overcrowded houses.

3. Badly Constructed Houses: Badly constructed houses pose a health hazard because if they collapse they can cause permanent injury or death. Not only the material used but also the way the house is planned may be dangerous.

Whenever you find a badly constructed house, proceed as follows:

- i. Advise the householder where he can get help for improving the safety of his house.
- ii. Plastering the walls will prevent the breeding of sandflies and other insects. Advise the householder to smoothen the walls using locally available material.
- iii. Smooth floors prevent the spread of dust and locally available material must be used to pack the floors to remove the dust hazard.
- iv. Pay attention to the roofing of the house to protect against adverse weather conditions.
- v. Help the householder to improve the planning of his house to make it more habitable and conducive to healthy living.
- vi. Educate the household on the advantages to health of well-constructed houses.

4. Unhygienic Food Storage Arrangements: Food in rural areas is in short supply and its proper storage is important to protect it against being eaten by rats, as well as against contamination by flies and other insects.

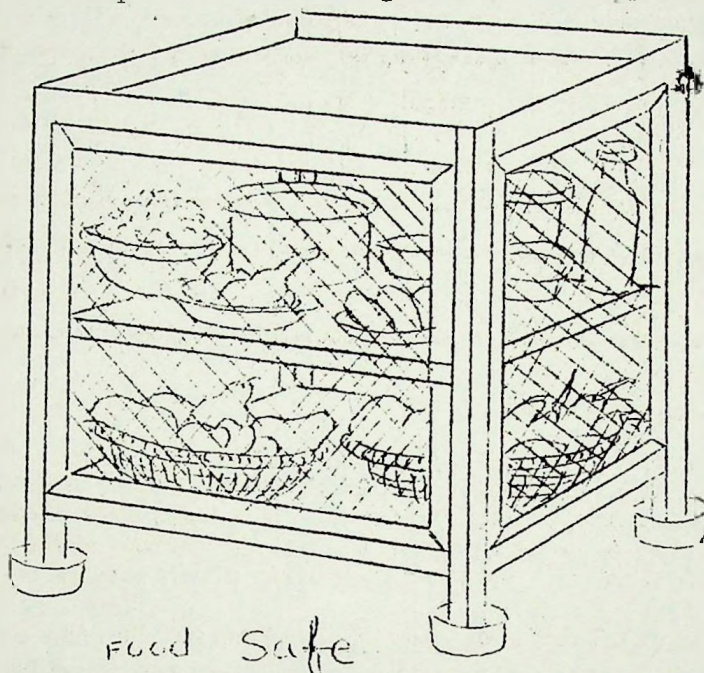
Proceed as follows:

- i. Inspect the food storage arrangements.
- ii. Advise on the improvements necessary to protect the food from being eaten or spoiled by rats, or contaminated by flies and weevils.
- iii. Educate the family on the importance of eating clean food and discuss with them the diseases that are spread by contaminated food.
- iv. Look at the arrangements for storing grain and make sure that the container is protected from infestation by rats and other vermin.

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The Food Safe: the Food Safe shown in figure 5.1 is easy and cheap to construct. It has the following advantages:

- i. The food is protected against flies and other insects and vermin. Make sure that the wire mesh is of the right size.
- ii. The food is ventilated and can be kept fairly cool if the safe is placed at the proper place in the house.
- iii. It can be locked against stealing of the food.
- iv. By placing each leg of the safe in a tin containing water, or by hanging the safe to keep it off the floor, you will protect the food against invasion by ants.



YOU MUST ADVISE THE HOUSEWIFE AGAINST STORING COOKED FOODS FOR TOO LONG AS THEY CAN GET SPOILT AND THIS ENCOURAGES THE BREEDING OF GERMS.

5. Insanitary Latrines: The hazards of insanitary latrines in ~~the~~ homes have been described in section 6.3.

You should detect the number of insanitary latrines in your area during the base-line survey. This survey will also give you the opportunity to assess the number of households which have to latrine at all.

THE USE OF A LATRINE OFTEN REQUIRES CHANGES IN ATTITUDE BY THE USER. THESE CAN BE ACHIEVED ONLY THROUGH A CONCENTRATED EFFORT ON YOUR PART BY EDUCATING THE COMMUNITY AND DEMONSTRATING YOUR WILLINGNESS TO HELP.

If possible construct a water-seal latrine (e.g., RCA or PRAI) to demonstrate how a sanitary latrine can be built and how it is to be used.

See section 6.3.1 for further details.

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6. Uncontrolled Disposal of Waste Water and Solid Wastes:
The hazards to health following uncontrolled disposal of liquid and solid wastes are described in sections 6.2 and 6.4 where methods for the sanitary disposal of these wastes are also described.

The information collected during your initial survey for baseline data will give you an idea of the magnitude of the problem in your area. Proceed by drawing up a programme, with the help of your supervisor, to deal with the problem piecemeal.

YOU WANT TO ACHIEVE PERMANENT IMPROVEMENTS IN METHODS OF WASTE DISPOSAL. THE BEST WAY TO ACHIEVE THIS IS THROUGH A PLANNED STEP-BY-STEP PROGRAMME BASED ON LOCAL CONDITIONS, HABITS AND TABOOS. TRY TO AVOID ANY CRASH PROGRAMMES WHICH MAY NOT LEAD TO THE DESIRABLE PERMANENT RESULTS.

REMEMBER THAT YOUR SUPERVISOR IS SPECIALLY TRAINED IN ENVIRONMENTAL HEALTH AND ALL YOUR EFFORTS IN THIS FIELD SHOULD BE CLOSELY PLANNED WITH HIM AND THROUGH HIS ADVICE.

5.2.3. HAZARDS IN THE FIELDS

The farmer spends most of his working day in the field where he is using agricultural tools, mechanized or otherwise, and where he is in constant contact with plants and chemicals. All these create occupational health hazards of which he has to be made aware by the health worker so that good health is promoted and maintained.

1. Accidents Related to the use of Agricultural Tools:

Agricultural tools whether mechanized or not, usually consist of heavy equipment supplied with sharp blades which are often unguarded. Accidents from such tools include:

- i. cuts producing wounds of varying degree and severity;
- ii. fractures, which may be simple, compound or complicated;
- iii. crushing injuries which may result in injuries to vital organs; these are more likely to occur when tractors are used in farming.

See the chapters relating to the various types of injuries and follow the steps suggested therein for the treatment of accidents.

REMEMBER THAT FIELDS ARE ALWAYS FULL OF MANURE WHICH IS USED AS A FERTILIZER: SO ENSURE THAT EVERY ACCIDENT INVOLVING A WOUND MUST BE GIVEN TETANUS TOXOID OR ANTI-TETANUS SERUM.

2. Snake Bites: As snakes are usually found in the countryside, it is not surprising that the majority of snake bites occur in farmers, particularly during the harvesting of sugar cane, wheat, etc., when the habitats where snakes live are being destroyed. Special precautions must, therefore, be taken during this period.

See section 18.9 for the procedures to be followed in cases with snake bites.

3. Scorpion Stings: As scorpions also live in the rural areas, farmers are more prone than other people to scorpion stings. However, scorpions often enter houses in villages and live under boxes, etc. so that the community is also at a high risk.

See section 18.10 for the procedures to be followed in scorpion stings.

4. Diseases Related to use of Pesticides: The farmer who wants to get a good income from selling his crops has to ensure that they are not destroyed or infested with pests. As a pest control measure, pesticides (DDT, BHC, Malathion, etc) are used for spraying crops.

The pesticide is sprayed in a fine spray and the aerosols may be inhaled by the sprayer causing bronchial and lung irritation which may result in chronic disease. Contact with the pesticide may produce skin disease which will require attention. Furthermore, certain pesticides, e.g., DDT, are toxic and may be injurious to health causing poisoning. DDT, the most commonly used pesticide in many parts of the country, is retained in the body and cumulative toxicity may result.

AS A HEALTH WORKER YOU ARE RESPONSIBLE FOR EDUCATING THE COMMUNITY ON THE HAZARDS RELATED TO THE USE OF PESTICIDES AND THE PRECAUTIONS WHICH MUST BE TAKEN IN USING PESTICIDES.

PREVENTIVE PESTICIDE TOXICITY IS VERY IMPORTANT AS OUTING PATIENTS WITH PESTICIDE POISONING IS PROLONGED AND CHRONIC INCAPACITATING CONDITIONS MAY BECOME ESTABLISHED.

Proceed as follows:

- i. Acquaint yourself with the kinds of pesticides in use in your area.
- ii. Discuss with your supervisor and the agricultural officers the hazards related to the pesticides in use.
- iii. Inform the community of the dangers to their health when pesticides are badly handled.
- iv. Inform them of the precautions which they must take to prevent contact, inhalation and poisoning from pesticides.
- v. Ensure that children are not exposed to pesticide poisoning.

IF YOU SEE ANY SIGNS OF PESTICIDE TOXICITY REFER THE PATIENT TO THE DOCTOR WITHOUT DELAY.

5. Diseases Related to Plants and Pollens: Allergies to plants and pollens occur more frequently in rural areas where plants of various kinds are to be found. Very often a person who is allergic to specific plants will know at what time of the year signs and symptoms of allergy occur. If the allergy is specific to one plant (which is seldom the case), desensitization is possible but this is a lengthy procedure and has to be done by a skin specialist. In practice it does not happen with farmers because the allergy is often of a multiple nature and desensitization would then be difficult.

Allergic symptoms occur in the form of:

- i. attacks of asthma (see section 20.4.1);
- ii. skin allergy (see section 18.1).

When these symptoms appear treat as scheduled in the relevant sections referred to above.

SOME ALLERGIES CAN BE PREVENTED, ESPECIALLY WHEN THEY OCCUR AT A DEFINITE SEASON OR TIME OF THE YEAR. IN THESE CASES REFER THE PATIENT TO THE PRIMARY HEALTH CENTRE FOR ADVICE.

Your responsibilities in preventing the occurrence of allergies include:

- i. educating the farmers on the causes of asthma and allergic skin diseases;
- ii. advising them on the use of protective clothing to prevent contact between plants and the skin;
- iii. advising them on the use of inhalers when signs start to appear.

6. Diseases Related to Field Dust: In the dry season, the fields are dry and dusty. Particles of dust are inhaled and may cause bronchial irritation giving rise to attacks of bronchitis. Continuous exposure to the inhalation of dust will result in chronic bronchitis, which may slowly incapacitate the farmer from doing a full day's work.

IT IS YOUR DUTY TO ADVISE FARMERS TO SEEK EARLY MEDICAL TREATMENT FOR ANY CHEST CONDITIONS TO PREVENT THE ESTABLISHMENT OF CHRONIC CHEST DISEASES.

Irritation of the eyes is more frequent in the rural areas during the dry season than at other times of the year.

5.2.4 HAZARDS RELATED TO COTTAGE INDUSTRIES

Small industries are established in many rural areas, where the activities are developed in the home and the products are sold through cooperatives or directly. The most popular of these industries are weaving, dyeing, and the production of textiles, and pottery. Machines may be used to a large or small extent and a number of people may get together at the place of work, constituting a small factory. Unless proper precautions are taken, these industries may pose health hazards and it is your duty to advise on the health of the workers.

Proceed as follows:

- a. Carry out a survey of all the cottage industries in your area.
- b. Note the type of industry and the number of workers that each employs.
- c. Note the type of building where the industry is carried out with special reference to:
 - i. lighting;
 - ii. ventilation;
 - iii. drainage, if water is used in the process.
- d. If machinery is used, e.g., sewing machines, looms, or potter's wheels, note whether the machines are protected against accidents.
- e. Keep a supervisory control on the health aspects of the industries.

1. Accidents with Machinery: Mechanical machines which are used in cottage industries should be properly protected to prevent accidents. Particular attention should be paid to chopping and turning machines in which fingers can be crushed or get amputated. The machines used for chopping up animal food is often the cause of amputated fingers, especially in children who are not aware of the hazard it carries. As this machine is found in many rural homes, you should pay special attention to it.

TECHNIQUES APPROPRIATE FOR THE
VILLAGES & SOME EXAMPLES

Wherever machines are used, proceed as follows:

- i. During your visit to the villages, note whether the machines are properly guarded and used.
- ii. Advise on any changes that may be necessary to render machinery safe.
- iii. Note the lighting and ventilation and advise on any improvements you consider necessary to promote a healthy working environment.

In case of accidents with machinery treat as suggested under the chapters dealing with wounds and fractures.

2. Health Hazards of Potters, Weavers and Dyers: Pottery is a common source of employment as containers for carrying water and other pottery utensils are in common use. The material used by the potter contains silica, which when inhaled gives rise to irritation of the bronchi and lungs and may result in chronic lung diseases. Also the risk of burns from kilns which are used for baking the pottery pose a hazard to health unless proper precautions are taken. Textile weaving, carpet weaving and other industries where cotton is used pose a health hazard because of the fine cotton dust which is inhaled, causing bronchial and lung irritation. It is, therefore, very important that adequate ventilation be provided in places where these trades are conducted so that the fine cotton dust is carried away from the working environment. Extractor fans are a big help in reducing this occupational hazard, while at the same time they are cheap to purchase, easy to fit and cheap to run.

CHILDREN SHOULD NOT BE ALLOWED TO WORK IN INDUSTRIES WHERE COTTON IS USED AS PERMANENT INJURY TO THEIR HEALTH MAY RESULT.

Chemical dyes are usually used in the dyeing of cotton fabrics. These dyes if ingested in large doses, may have a harmful effect on the body. Children should be kept away from dye vats in which the dyeing process is carried out as the after finishing work to remove the chemical dyes on their hands.

If any of these trades are in operation in your areas proceed as follows:

a. Pottery

- i. Check that the dust from the potter's wheel is carried away from the potter and it is not inhaled.
- ii. Check that the machinery used is not liable to cause accidents.
- iii. Check that the waste water is drained away in a sanitary way.
- iv. Educate the potter how to take precautions to protect his health.
- v. If a kiln is used, ensure that the hazards of fire are removed.

b. Weaving

- i. Check the premises where weaving industries are carried out to ensure that the premises are generally suitable.
- ii. Check the ventilation to ensure that cotton dust is carried away from the building.
- iii. Check the methods employed for the disposal of waste products.
- iv. Educate the workers in ways of protecting their health against the diseases arising out of their employment.
- v. Advise on improvements which may be necessary to render the working environment healthy.
- vi. Advise on the importance of seeking early treatment for diseases with early signs and symptoms.

KEEP THE CLOSE CONTACT WITH YOUR SUPERVISOR WHEN CARRYING OUT ACTIVITIES RELATED TO COTTAGE INDUSTRIES AS HE IS IN A POSITION TO COOPERATE WITH SOME OFFICERS CONCERNED WITH COMMUNITY DEVELOPMENT INDUSTRIAL

- v. If a kiln is used, ensure that the hazards of fire are removed.

b. Weaving:

- i. Check the premises where weaving industries are carried out to ensure that the premises are generally suitable.
- ii. Check the ventilation to ensure that cotton dust is carried away from the building.
- iii. Check the methods employed for the disposal of waste products.
- iv. Educate the workers in ways of protecting their health against the diseases arising out of their employment.
- v. Advise on improvements which may be necessary to render the working environment healthy.
- vi. Advise on the importance of seeking early treatment for diseases with chest signs and symptoms.

KEEP VERY CLOSE CONTACT WITH YOUR SUPERVISOR WHEN CARRYING OUT ACTIVITIES RELATED TO COTTAGE INDUSTRIES AS HE IS IN A POSITION TO COOPERATE WITH OTHER OFFICERS CONCERNED WITH COMMUNITY DEVELOPMENT INDUSTRIAL PROJECTS.

c. Dyeing:

- i. Check that the sullage water is disposed off in a sanitary way.
- ii. Advise those handling dyes to wash their hands properly before eating.

5.2.5 HAZARDS RELATED TO TRADITIONAL HABITS

Tradition and necessity demand that certain practices which pose health hazards be carried out in rural areas. Livestock and chickens are kept to provide milk and food and to use in land tilling and cultivation where mechanized agriculture is not yet developed or on small holdings. Also, the limited income of the small farmer demands that maximum use be made of wastes to provide compost and fuel, both of which create health hazards.

1. Health Hazards Connected with the Collection of Animal Wastes for Household Use: Cow dung is collected in many villages for making into cakes which are used to provide fuel for cooking and heating. The dung is collected by hand, mixed with husk and flattened out into shape for drying in the open sun. This method of collection and preparation is insanitary and, particularly if the person handling the dung has cuts on the hand, exposes him or her to the risk of tetanus and other infections. This, coupled with fly breeding and the lack of personal hygiene leads to a high incidence of diarrhoeas among children.

If you are working in an area where cow dung is collected for use as fuel, take the following precautions to safeguard the community's health:

- i. educate the community on the risks connected with this habit;
- ii. impress upon the community, particularly the children employed in this 'trade', the need for personal hygiene and the importance of not letting cow dung get anywhere near the mouth through the fingers and hands. The importance of washing the hands and especially the finger nails with soap and water before eating must be particularly stressed.
- iii. Discuss the hazards of handling cow dung when cuts are present on the hands.
- iv. Assist the community in finding suitable places away from the house for drying the cow dung cakes to reduce the fly breeding dangers.
- v. Assist the houseowner in construction smokeless chulas for use with cow dung cakes.
- vi. Impress upon cow dung handlers the importance of seeking medical treatment for cuts and other injuries.

Cow dung is also used in composting and in manure pits. For details on the control of these pits to render the process sanitary see section 6.4.2.

2. Health Hazards Related to the Breeding of Livestock: Livestock is part and parcel of every village house and forms the major form of wealth. It is essential for nutrition and serves as a source of income. It is necessary, however, that cows and buffaloes be kept in hygienic conditions which do not create health hazards.

Your duties to promote the community's health require that you:

- i. advise the house owners to provide adequate space for their livestock to avoid their being too near the house itself;

IT IS IMPORTANT THAT STABLES SHOULD BE PROVIDED FOR LIVESTOCK SEPARATE FROM THE LIVING QUARTERS.

- ii. advise that refuse from stables should be collected regularly and composted in a sanitary way;
- iii. advise that livestock should be kept clean to avoid fly infestations;
- iv. advise that the cow's udders should be cleaned before milking and so should the milker's hands;
- v. advise that the feeding places for livestock should be raised off the ground and kept clean;
- vi. advise that sick cows and buffaloes should be kept in isolation and treated;
- vii. educate the community on the diseases related to livestock which could be passed on to man, e.g., tuberculosis from cows or undulant fever from goats.

THE FAMILY AND ENVIRONMENT IN WHICH IT LIVES ARE INSEPARABLE AND THE IMPROVEMENT OF THE LATTER MUST HAVE A BENEFICIAL EFFECT ON THE FORMER.

5.2.6. HAZARDS RELATED TO LACK OF EDUCATION

One should distinguish between education and schooling. A person may be an excellent scholar but his or her ideas about healthy living may be grossly lacking. It is your duty to teach the community how to develop good personal habits and how to ensure a healthy environment. Your duties include:

- i. participation in health education programmes for school children;
- ii. teaching school children how to keep healthy through personal hygiene; the care of their teeth, the use of clean clothing and bedding, healthy sleeping habits and good nutrition;
- iii. teaching children the importance of physical exercise for the proper development of the body and the mind;
- iv. educating the children regarding the importance of a healthy home for maintaining good health;
- v. educating the community leaders to appreciate their role in health promotion activities to improve the community environment;
- vi. educating the heads of the households on ways to promote the health of their families through improving the environment of their households;
- vii. educating the mothers on how to look after their children and promote their health through regular immunization, good nutrition and healthy living.

YOU MUST ALWAYS KEEP GOOD RELATIONS WITH ANY MEDICAL PRACTITIONERS WORKING IN YOUR AREA. REMEMBER THAT THEIR OBJECTIVES ARE THE SAME AS YOURS, 'TO PROVIDE HEALTH FACILITIES TO THE COMMUNITY AND TREAT THOSE WHO ARE SICK'.

Communications in many rural areas are not very satisfactory and patients may have difficulty in reaching the Primary Health Centre when they are referred to the doctor. As far as possible you should try and arrange transport for such patients. In cases of emergency, elicit the assistance of the village panchayat and other community leaders who may be able to help in providing some form of transport.

UTILIZE TO THE MAXIMUM THE VISITS BY THE DOCTOR AND THE SUPERVISOR IN EXTENDING THE MEDICAL FACILITIES TO THOSE WHO HAVE NOT GOT THE MEANS TO TRAVEL.

YOU HAVE A MAJOR ROLE TO PLAY IN THIS FIELD AND IT IS HOPED THAT YOUR PRESENCE IN THE COMMUNITY WILL PROVIDE BETTER HEALTH CARE AND BE THE MAIN FACTOR IN PREVENTING SIMPLE AILMENTS FROM BECOMING MAJOR COMPLICATED AILMENTS BY RECEIVING FROM IT AN ADEQUATE MEDICAL CARE OR EARLY REFERRAL.

Both you and your team make, the health worker (female), are expected to spend to considerable part of your time in home visiting. Do not miss this opportunity to look after the health needs of the family in its own home.

KNOW YOUR LIMITATIONS AND REFER PATIENTS TO SEE THE DOCTOR IN GOOD TIME. THIS WILL HELP THE PATIENT TO RECEIVE A BETTER QUALITY OF HEALTH CARE THAN AT PRESENT.

5.2.8. HAZARDS RELATED TO POVERTY:

Millions of people in India live below the poverty line, i.e. they cannot afford the basic requirements of food and shelter. The average income in rural areas is below that of urban workers, but the needs of rural populations are also less than those of town dwellers.

Poverty by itself may not affect health adversely, but when it is combined with ignorance and a lack of education then the effects on health become manifest. The lack of adequate schooling facilities in rural areas reduce opportunities for health education of children and the establishment of good living habits among them.

Bad nutrition in rural areas is often attributed to poverty. However, it is clear that poverty alone is not to blame, but cooking habits and eating fads play an important role in the high incidence of malnutrition in India.

YOUR ROLE IS TO GET THE MOST OUT OF WHAT THE PEASANT IN THE RURAL AREA CAN AFFORD WITH HIS LIMITED INCOME. PAY SPECIAL ATTENTION TO NUTRITION AND COOKING HABITS AND TO THE IMPROVEMENT OF THE ENVIRONMENT. TEACH AND SHOW PEOPLE HOW TO SPEND THE LITTLE MONEY THEY CAN AFFORD IN THE BEST POSSIBLE WAY.

You can help the community in your area by:-

- i) getting them advice on what crops to grow for food (food crops) and for selling (cash crop); this will help their nutrition as well as give them an income;
- ii) teaching them how to get good nutrition from cheap foods;
- iii) demonstrating to them how to cook foods as to retain their nutritional properties; take the cooperation of the Health Worker (Female) in this activity.
- iv) teaching them to maintain good health; this will save them money which they would normally spend on medicine;
- v) Motivating them to practise family planning so that the little wealth they have will not be dissipated among many persons;
- vi) telling them how to keep fit so that they can work more and earn more money for their food and comfort.

REMEMBER THAT POVERTY IS A SYNDROME CAUSED BY A NUMBER OF FACTORS. IDENTIFY THESE FACTORS AND FIND SOLUTIONS TO THEM. YOU WILL FIND THAT TO SOLVE THE MANY PROBLEMS YOU WILL HAVE TO COOPERATE WITH OTHER OFFICERS? e.g. AGRICULTURAL, EDUCATIONAL, AND COMMUNITY DEVELOPMENT, WORKING IN THE SAME BLOCK AS YOUR SELF.

AS A HEALTH WORKER YOU ARE A COMMUNITY WORKER AND ALTHOUGH YOUR WORK EMPHASIZES HEALTH YOU MUST REMEMBER THAT HEALTH IS RELATED TO MANY FACTORS. SO BEHAVE AS A COMMUNITY WORKER AND THE COMMUNITY WILL SEEK YOUR ADVICE.

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