**INTRODUCTION**

1. **Indoor Air Pollution**

The term indoor air pollution means an increase of pollutants at a harmful level in indoor environment. It is one of the four most critical global environmental problems, probably exposes more people worldwide to important air pollutants than does pollution in outdoor air. Smokey houses in Nepal found peak level of suspended particulates 10,000/m3. Rural people in developing countries may receive as much as two-third of the global exposure to particulates. Women and young children suffer the worst exposure.

In Bangladesh 80% of it’s people live in rural areas. They are mostly poor as well as lacking in health education. In rural Bangladesh, people use biomass cooking fuels. The high moisture contents of biomass cooking fuels, combined with the inefficiency of traditional stoves, results in incomplete combustion producing air pollution. This usually affects indoor air also. Tobacco smoke inside the house is another potential source effects not only the smokers but also other households. Some common components of indoor air pollution in rural areas includes respiratory particles from tobacco smokes and stoves; carbon monoxide from combustion equipments, stoves; Nitrogen dioxide from gas cookers, cigarettes; carbon dioxide from combustion, respiration etc.

Our women and young children suffer the greatest from this indoor air pollution. It causes acute respiratory infections in young children, chronic lung disease and cancer in adults and adverse pregnancy outcome.

So it is very important to prevent indoor air pollution and it can be done by proper healthful housing. The following minimum standards of rural housing, should be maintained-

1. There should be at least two living rooms.
2. Ample verandah space may be provided.
3. The built up area should not exceed one third of the total area.
4. There should be a separate kitchen with a paved sink or platform for washing utensils.
5. The house should be provided with a sanitary latrine.
6. The window area should be at least ten percent of the floor.
7. There should be a sanitary well or tube well within a quarter of a mile from the house.
8. There should be adequate arrangement for the disposal of waste water, refuse and garbage.

By maintaining proper cross ventilation and proper healthful housing we can prevent this indoor air pollution.

**B. WASTE DISPOSAL**

The term “solid wastes” includes garbage, rubbish, demolition products, sewage, dead animals, manure and other discarded materials.

Disposal of waste may termed as a process of getting rid of this unwanted materials or substances.

It is now largely the domain of sanitarians and public health engineers. Improper disposal of wastes play as a potential source of health hazards. In many ways these affect health and causes diseases as these decomposes and favors fly breeding; attracts rodents and vermin; pathogen which may be present in the solid waste may be transmitted back to man’s foods through flies and dust; there is every possibility of water and soil pollution; unsightly appearance and nuisance from bad odour in continuous form may affect mental health also. So, proper disposal of waste is very important for health and safety.

In the process of waste management there should be a arrangement of temporary collection site and site of final disposal.

There is no single method of waste disposal which is equally suitable in all circumstances. The choice of a particular method is governed by local factors such as cost and availability of land and labor. The principal methods of waste disposal are-

1. Dumping.
2. Controlled tipping or sanitary land fill.
3. Composting
4. Incineration
5. Manure pits and,
6. Burial

Among these for putrescent wastes sanitary land fill is the best method while non-putrescent like plastic materials best for recycling. In rural areas these systems could be applied with little cost by educating the people but the outcome will be enormous.

Human excreta are a potential source of infection and cause of environmental pollution. Health hazards from improper excreta disposal includes soil pollution, water pollution, contamination of foods and propagation of flies. The resulting diseases includes typhoid and paratyphoid fever; diarrhoeal diseases; ascariasis, viral hepatitis, parasitic infestation and other similar intestinal infection. Vector like flies and cockroaches play major role in transmitting the diseases. As these diseases are amongst the most commonly occurring diseases imposes a huge burden to the community in terms of morbidity and mortality thus act as a basic limit to social and economic progress. Most importantly proper excreta disposal in rural areas requires little expense. A sanitary latrine is sufficient to fulfill the requirement. So, only awareness could solve the problem.

**RATIONALE**

According to ‘WHO Global & Regional Burden of disease Report’- indoor air pollution is a major cause of death & illness in developing countries worldwide. Bangladesh is not an exception. Its effect on respiratory system is estimated to cause between 1.6-2 million deaths each year in developing countries. Indoor air pollution contributes to acute respiratory tract infection in young children, chronic lung diseases and cancer in adults, and adverse pregnancy outcomes such as stillbirth for women exposed during pregnancy. Acute respiratory infection, principally pneumonia, is the thief killers of young children, causing 10 percent of the total burden of disease in developing countries. So, reducing indoor air pollution from high to low levels could potentially halve the incidence of childhood pneumonia.

John Bowes; founder, Health Housing Institute said that “walking into a polluted indoor environment can sometimes be compared to placing your head inside plastic bag filled with toxic fumes**”.** Men spend 1/3rd of life asleep. But they spend their entire life breathing. What you breathe should be as important as where you sleep.

People’s exposure to indoor air pollution is determined by concentration of pollutants in the indoor environment mainly by the type of fuel & stove used & the kitchen location. Most importantly by the time that individuals spend in polluted environment. Studies show that indoor air pollution level household reliant on biomass fuel or coal are extremely high. Smokey houses in Nepal found peak level of 10,000 particulate matter/m3 of air.

Studies in China, India and Nepal have shown that up to half to adult women, few of whom smoke; suffer from chronic lung and heart diseases. Nonsmoking Chinese women exposed to indoor coal smoke have a risk of lung cancer similar to that of men who smoke lightly. Comprehensive improvement in indoor air quality in developing countries might avert acute respiratory infection and chronic respiratory diseases by 15 per cent and of respiratory tract cancer by 10 per cent.

Bangladesh is a country situated South East Asia. 92% people depend on biomass fuel. In our country especially in rural area maximum people are poor & least educated. Women & children are particularly vulnerable most of their indoor. Again the women spend their most the times in kitchen. As a result women face pollution exposure fourfold than men. Infants & young children suffer the worst mortality & morbidity from indoor air pollution because children are only outside for an average of 3 hour per day.

Rural people habituated to use ‘open field’ for defecation. In India 74% people live in rural areas. Majority of them use open field. Statistics indicate that the intestinal group of diseases claim about 5 million lives every year while another 50 million people suffer from these infection. Specifically enteric group of fevers is very common in rural areas – the annual incidence varying from 102 – 2119 per 100,000 populations in different areas. Hookworm disease is highly prevalent; 45 million people are estimated to be infested with. Simply a sanitary latrine is sufficient to solve the problem along with community awareness.

The rural people of Bangladesh lacking in knowledge air pollution, indoor air pollution, sewage & refuse disposal. Indoor air pollution along with improper waste disposal could heavily affect their health.

So, studying Knowledge and practice of indoor air pollution and waste disposal is of great importance for planning & implementation to prevent & improve public health in Bangladesh.

**General Objective:**

To know the knowledge & practice of rural people regarding indoor air pollution and waste disposal.

**Specific Objectives:**

1. To see knowledge and provision of minimum standard of rural housing.
2. To observe the provision of cross ventilation in their housing.
3. To know the arrangements for stocks of agricultural products.
4. To know the provision of refuse and sewage disposal.
5. To see the knowledge regarding diseases spread out of improper waste disposal.

# METHODOLOGY

## Type of study : Cross sectional type of descriptive study .

* Study place : Uttar Mithachari village of Ramu upazila ,Cox’s Bazar
* Time of Study: March 2014
* Study population : Head of the household or their representative.
* Sample size : 155
* Sampling technique : Non-probability purposive sampling was done.
* Data collection instrument : A semi –structured questionnaire was used to collect data.
* Data collection method : Data was collected from the respondents by the researchers (students) themselves by face to face interview.
* Data analysis : on completion of data collection, data were tabulated after checking and verification. Data were analysed by simple statistical method using a computer.

RESULT

Table-1: Distribution of respondents according to their age

|  |  |  |
| --- | --- | --- |
| **Age groups (Years)** | **Total Number** | **Percentage %** |
| 21 – 30 | 39 | 25.16 |
| 31 – 40 | 41 | 26.45 |
| 41 – 50 | 48 | 30.97 |
| > 50 | 27 | 17.41 |
| **Grand Total** | **155** | **100%** |

This table shows that 25.16% respondents belongs to the age group 21 – 30 years, 26.45% among 31 – 40 years, 30.97% among 41 – 50 years and 17.41% respondents are in the age group more than 50 years.

Table-2: Educational qualification of the respondents

|  |  |  |
| --- | --- | --- |
| **Educational status** | **Total Number** | **Percentage** |
| Illiterate | 40 | 25.81% |
| Primary | 66 | 42.58% |
| Secondary | 42 | 27.10% |
| Higher secondary | 07 | 4 .51% |
| **GrandTotal** | **155** | **100%** |

This table shows 42.58% respondents studied up to primary level, 27.10 % studied up to secondary level, 25.81% are illiterate and 4.51% higher secondary level.

Table-3: Occupation of the respondents

|  |  |  |
| --- | --- | --- |
| **Occupation** | **Total Number** | **Percentage** |
| Farmer | 20 | 12.90% |
| Day labour | 36 | 23.21% |
| service | 33 | 21.29% |
| Business | 30 | 19.35% |
| Over-seas employment | 7 | 4.52% |
| Others | 23 | 18.71% |
| **GrandTotal** | **100** | **100 %** |

This table shows that ,23.21 % of the respondents are day labours, 21.99% of them are service holders.19.35% of them are businessman,18.71% of them are others,12.90% of them are farmer and the remaining 4.52 % are overseas employment.

Table-4: Monthly family income of the respondents

|  |  |  |
| --- | --- | --- |
| Income (Taka) | Total Number | Percentage % |
| <3000 | 27 | 17.42% |
| 3001 - 6000 | 34 | 21.93% |
| 6001 - 9000 | 40 | 25.81% |
| 9001 – 12,000 | 20 | 12.91% |
| >12,000 | 34 | 21.93% |
| Total | 155 | 100% |

This table shows that, 17.42% families have monthly income < 3000 Taka, 21.94% in between 3001 – 6000 taka, 25.81%, in between 6001 – 9000Tk and 21.93% more than 12,000 taka.

Table-5:Distribution of respondents according to their number of children

|  |  |  |
| --- | --- | --- |
| **Number of children** | **Total Number** | **Percentage%** |
| Nil | 4 | 02.58% |
| 1 - 2 | 58 | 37.42% |
| 3 - 4 | 58 | 37.42% |
| 5 or more | 35 | 22.58% |
| **Grand Total** | **155** | **100%** |

This table shows that 2.58% families do not have child, 37.42% have 1 – 2 children, 37.42% have 3 – 4 children and 22.58% have 5 or more children.

**Table-06: Total land area in the premises of house**

|  |  |  |
| --- | --- | --- |
| **Land area of hoses(decimal)** | **Total Number** | **Percentage (%)** |
| <10 | 89 | 57.42% |
| 11-20 | 38 | 24.51% |
| 21-30 | 19 | 12.26% |
| 31-40 | 02 | 1.29% |
| >40 | 07 | 4.51% |
| **Grand total** | **155** | **100%** |

This table shows that 57.42% houses have <10 decimals of land, 24.51% 11-20 decimals, 12.26% have 21-30 decimals, 1.29% has 31-40 decimals and 4.51% has >40 decimals.

**Table- 07: Total space of the houses**

|  |  |  |
| --- | --- | --- |
| **Total Space of houses (sft)** | **Total Number** | **Percentage(%)** |
| <300 | 113 | 72.90% |
| 301-600 | 33 | 21.29% |
| >600 | 09 | 5.81% |
| **Grand total** | **155** | **100%** |

Table shows that 72.90% has <300 sft space in their houses, 21.29% has 301-600 sft and 5.81% has >600 sft.

**Table-08 : Number of bed room(s)**

|  |  |  |
| --- | --- | --- |
| **Number of bed room(s)** | **Total Number** | **Percentage(%)** |
| 1 | 33 | 21.29% |
| 2 | 72 | 46.45% |
| 3 | 28 | 18.06% |
| >3 | 22 | 14.19% |
| **Grand total** | **155** | **100%** |

This table shows that 21.29% has 1 bedroom, 46.45% has 2 bedrooms, 18.06% has 3 and 14.19% has >3 bedrooms.

**Table-09: Information** **regarding built of floor.**

|  |  |  |
| --- | --- | --- |
| **Floor** | **Total Number** | **Percentage (%)** |
| Brick built | 57 | 36.77% |
| soil | 98 | 63.23% |
| **Grand Total** | **155** | **100%** |

This table shows that 36.77% houses have brick built floors and 63.23% have floors made of soil.

**Table-10: Information regarding built of walls.**

|  |  |  |
| --- | --- | --- |
| **Wall** | **Total Number** | **Percentage** |
| **Brick built** | **40** | **25.81%** |
| **Tin** | **17** | **10.96%** |
| **Soil** | **67** | **43.23%** |
| **Straw & Others** | **31** | **20.00%** |
| **Grand Total** | **155** | **100%** |

This table shows that. 25.81% has brick built walls, 10.96% walls built of tin, 43.23% made of soil and 20% made of straw and other materials.

**Table- 11: Distribution of respondents according total number of window(s) in their houses.**

|  |  |  |
| --- | --- | --- |
| Number of windows | Total numbers | Percentage (%) |
| 1 | 97 | 62.58% |
| **2** | 24 | 15.48% |
| **> 2** | 06 | 03.87% |
| Nil | 28 | 18.07% |
| Grand total | 155 | 100% |

This table shows that 62.58% house has one window, 15.48% has 2 windows, 3.87% has more than 2 and 18.07% has no window.

**Table-12: Distribution of the respondents according to knowledge regarding diseases like common cold & others from inadequate ventilation**

|  |  |  |
| --- | --- | --- |
| **Awareness** | **Total Numbers** | **Percentage (%)** |
| Yes | 110 | 70.96% |
| No | 45 | 29.03% |
| **Grand Total** | **155** | **100%** |

This table shows that 70.96% respondents have knowledge about diseases resulting from inadequate ventilation & 29.09% respondents are not aware of it.

**Table-13: Distribution of respondents according to separate arrangements for storing of food grains & straw**

|  |  |  |
| --- | --- | --- |
| **Separate arrangements** | **Total numbers** | **Percentage (%)** |
| Yes | 50 | 32.26% |
| No | 105 | 67.74 |
| **Grand total** | **155** | **100%** |

This table shows that 32.26% respondents stores their food crops in separate place & 67.74% respondents do not have.

**Table-14: Distribution of respondents according to their knowledge of different diseases produced by grain dust & straw.**

|  |  |  |
| --- | --- | --- |
| **Awareness** | **Total numbers** | **Percentage (%)** |
| Yes | 114 | 73.55% |
| No | 41 | 26.45% |
| **Grand Total** | **155** | **100%** |

This table shows that 73.55% respondents have knowledge of diseases produced by grain dusts & 26.45% respondents are not aware of this.

**Table-15: Distribution of respondents according to having verandah or not in their houses.**

|  |  |  |
| --- | --- | --- |
| **Verandah** | **Total numbers** | **Percentage (%)** |
| Yes | 99 | 63.87% |
| No | 56 | 36.13% |
| **Grand Total** | **155** | **100** |

This table shows that 63.87% respondents have verandah & 36.13% respondents do not have verandah.

**Table-16: Distribution of the respondents according to having separate kitchen.**

|  |  |  |
| --- | --- | --- |
| **Separate kitchen** | **Total numbers** | **Percentage (%)** |
| Yes | 110 | 70.97% |
| No | 45 | 29.03% |
| **Grand Total** | **155** | **100%** |

This table shows that 70.97% respondents have separate kitchen & 29.03% respondents do not.

**Table-17: Distribution of respondents according to their awareness of causing diseases from smoke produced during cooking**

|  |  |  |
| --- | --- | --- |
| **Awareness** | **Total numbers** | **Percentage (%)** |
| Yes | 114 | 73.55% |
| No | 41 | 26.4% |
| **Grand total** | **155** | **100%** |

This table shows that 73.55% respondents are aware of lung diseases from smoke from cooking & 26.45% respondents are not aware of this.

**Table-18: Time of disposal of food scraps after dinner**

|  |  |  |
| --- | --- | --- |
| **Time** | **Total number** | **Percentage %** |
| Morning | 72 | 46.45% |
| Night | 83 | 53.55% |
| **Grand total** | **155** | **100%** |

This table shows that 53.55% respondents dispose food waste of dinner at night & 46.45% respondents dispose in morning.

**Table-19: Knowledge of respondents about breeding of flies on open food waste.**

|  |  |  |
| --- | --- | --- |
| **Knowledge** | **Total number** | **Percentage%** |
| yes | 135 | 87.09% |
| no | 20 | 12.90% |
| **Grand total** | **155** | **100%** |

This table shows that 87.09% respondents have knowledge the breeding of flies, mosquitoes on open food waste & 12.90% respondents do not aware of that.

**Table-20: Knowledge of respondents about diseases result from access of flies & cockroaches to foods**

|  |  |  |
| --- | --- | --- |
| **Knowledge** | **Total number** | **Percentage%** |
| Yes | 140 | 90.32% |
| No | 15 | 9.68% |
| **Grand total** | **155** | **100%** |

This table shows that 90.32% respondents have knowledge about the diseases caused by sitting of flies, mosquitoes on food & 9.68% respondents do not have knowledge about this.

**Table-21: Place poultry shed**

**n = 65**

|  |  |  |
| --- | --- | --- |
| **Place** | **Total number** | **Percentage** |
| separate | 36 | 55.38% |
| Attached to house | 20 | 30.77% |
| Within house | 09 | 13.85% |
| **Grand total** | **65** | **100%** |

This table shows that 23.22% people keep poultries in a separate place , 18.70 % keep near by the house and 58.06% people keep poultries in other place.

**Table-22: Approximate distance of sheds for domestic animals**

**n = 70**

|  |  |  |
| --- | --- | --- |
| **Place** | **Total number** | **Percentage%** |
| Near by | 40 | 57.14%% |
| <25 feet | 19 | 27.14%% |
| 25 feet or more | 11 | 15.72% |
| **Grand total** | **70** | **100%** |

This table shows that 25.806% keep cattles and goats near by the house ,12.26% keep in a place <25 feet away,7.09% keep in more or equal to 25 feet away from house.54.84% keep in other place.

**Table-23: Knowledge of respondents regarding diseases could be transmitted by cattle and poultries**

|  |  |  |
| --- | --- | --- |
| **Knowledge** | **Total number** | **Percentage%** |
| yes | 112 | 72.26% |
| No | 43 | 27.74% |
| **Grand total** | **155** | **100%** |

This table shows that 72.26% respondents are aware of the diseases that can be transmitted from cattles & poultries & 27.74% respondents are not aware of this.

**Table-24: Use of Smoke in cattle shed to dispel mosquitoes**

**n = 84**

|  |  |  |
| --- | --- | --- |
| **Use of smoke** | **Total Number** | **Percentage** |
| Yes | 46 | 54.76% |
| No | 38 | 45.24% |
| **Grand Total** | **84** | **100%** |

This table shows that 54.76% respondents use smoke in their cattle shed to dispel mosquitoes and 45.24 % do not use.

**Table-25: Site of Disposal of garbage and sullage**

|  |  |  |
| --- | --- | --- |
| **Site of Disposal** | **Total Number** | **Percentage** |
| Canal near the house | 46 | 29.68% |
| Bushes | 05 | 03.23% |
| Pit hole | 26 | 16.77% |
| Non Specific | 78 | 50.32% |
| **Grand Total** | **155** | **100%** |

This table shows that 29.68% in canal near the house, 3.23% in bushes, 16.77% in pit hole and 50.32% non specific.

**Table-26: Knowledge regarding breeding of flies in garbage**

|  |  |  |
| --- | --- | --- |
| **Knowledge** | **Total Number** | **Percentage** |
| Yes | 130 | 83.87% |
| No | 25 | 16.12% |
| **Grand Total** | **155** | **100%** |

This table shows that 83.87% of the respondents have knowledge regarding breeding of flies in garbage and 16.12% of the respondents lack the knowledge.

**Table-27: Storage of animal Dung**

**n = 84**

|  |  |  |
| --- | --- | --- |
| **Disposal of Dung** | **Total Number** | **Percentage** |
| Brick built with cover | 0 | 0% |
| Specific open hole | 84 | 100% |
| **Grand Total** | **84** | **100%** |

This table shows that 100% respondents stores i9 specific open hole.

**Table-28: Type of toilet used**

|  |  |  |
| --- | --- | --- |
| **Type of toilet used** | **Total Number** | **Percentage** |
| Open toilet | 33 | 21.29% |
| Water seal latrine | 75 | 48.39% |
| Septic tank | 47 | 30.32% |
| **Grand Total** | **155** | **100%** |

This table shows that 48.38% of the respondents use Water seal latrine,30.32% use septic tank and 21.29% use open toilet.

# Discussion:

Prevention and control of indoor air pollution and proper domestic waste disposal is of immense importance in maintaining acceptable health standard and wellbeing of the people of a country. In unban areas there are policies, plan and arrangements for the purpose. But in rural areas of Bangladesh it depends upon the families and individuals in the community. The infrastructure exists in Bangladesh is adequate to educate people and monitor. However continuous motivation is required as most of the peoples are ignorant and illiteracy is predominant. This cross sectional descriptive study was carried out to find out the knowledge and practice regarding indoor air pollution and waste disposal of rural people. Findings are discussed in the following pages.

# A. Socio-demographic information:

Regarding socio-demographic status Bangladesh falls into late expanding stage now and according to socio-economic status Bangladesh among the developing countries and with in the poorer countries.

To accomplish the study we required head of the households or his representative. So, regarding age respondents are almost evenly distributed; that is among the total 155; 39(25.16%) respondents belongs to the age group 21 – 30 years, 41(26.45% ) among 31 – 40 years, 48(30.97%) among 41 – 50 years though only 27(17.41%) respondents are in the age group more than 50 years of age that is the lowest number. Education affects life styles significantly in most cases. In this regard highest 66(42.58%) respondents studied up to primary level, very few the lowest number 7(4.51%) higher secondary level. Illiterates and secondary level study groups accounts almost equal; that is 42( 27.10 %) studied up to secondary level and 40(25.81% ) found illiterate.

Occupation relates significantly personal hygiene as well as family hygiene. Occupation of the respondents or the earning members in the family shows that marginally highest 36(23.21 %) are day labourer, among others second highest 33 (21.99%) are service holders, 30(19.35%) are businessman and 23(18.71% ) of them are engaged in different professions. A little number; although it is a village among 155 families only 20(12.90%) are farmers and the remaining 7(4.52 %) are in over seas employment. Regarding monthly family income highest 40(25. 81%) family income ranges 6001 – 9000Taka, lowest 27(17.42%) family income is less than 3000 Taka. Monthly income of taka ranging 3001 to 6000 and more than 12000 accounts same 34( 21.93%) and rest 20(12.91%) have a family income ranging 9001 to 12000 Taka.

Out of 155 families 4(2.58%) families yet to get child while 58(37.42%) have 3 – 4 and a significant number of families 35(22.58%) have 5 or more children. Although 58( 37.42%) families maintained national recommended family norms of having 1- 2 children during the study period.

**Indoor air pollution**

In Bangladesh 80% of the population lives in rural areas. Majority of them involved in agricultural works also includes some extent of animal husbandry, poultry, fishery, production of vegetables etc. The usually process & store their products in the premises of their housing.

Regarding total land areas in the premises of house; highest 57.42% houses have less than 10 decimals of land, lowest 1.29% has 31-40 decimals land area and only 4.51% has more than 40 decimals of land. Among rests 24.51% 11-20 decimals, 12.26% have 21-30 decimals. Areas of housing measuring less than 300 sft in more than two third of cases that is 72.90% families, others 21.29% has 301-600 sft and 5.80% has >600 sft. Regarding number of bedrooms about half of the respondents accounting 46.45% have 2 bedrooms, 21.29% have 1 bedroom, 18.06% have 3 and 14.19% >3 bedrooms. Regarding built of the

floor more than one third, that is 36.77% have their housing with brick built floors and the rest only 63.23% have floors made of soil. Findings regarding built of the walls of housing shows that 25.81% has brick built walls, 10.96% walls built of tin, 43.23% made of soil and 20% made of straw and other locally available materials. Windows are essential for ventilation but findings shows that almost two third of the houses, 62.58% has only one window that house has one window. This means there may be some ventilation during daytime but at night when all the family members are within the house are ill ventilated. Another 15.48% has 2 windows though the number of bedrooms is not correlated. So, whether ventilation is present or not could not be ascertained. Among rests only 3.87% has more than 2 windows and 18.07% has no window at all. Although almost all of the houses found ill ventilated knowledge regarding detrimental effect of ill ventilated house found good. Among 155 respondents 70.97% of them know diseases may result due to ill ventilated houses 29.03% respondents are not aware of it. Verandah is very much useful for many reasons. Study findings shows that 63.87% respondents have verandah while 36.13% do not.

Regarding storage of different products; 32.26% respondents stores their food grains and other products in separate place & 67.74% respondents do not have. This may affect in different ways according to the products and the way they store in their housing. Again knowledge in this issue exceeds the practice of the families; 73.55% respondents have knowledge of diseases produced by grain dusts & 26.45% respondents are not aware of this. Traditional ovens produce varying amount of smokes which is injurious to health specially the vulnerable groups – children and elderly peoples. Kitchen with in the house and without arrangement of exhaustion by no means acceptable. In this regard majority 70.97% housing has separate kitchen & 29.03% don’t. 73.55% of the respondents are aware of lung diseases from smoke from cooking & 26.45% respondents are not aware of if. Out of 155 families 84 have domestic animals. Use of smoke to dispel mosquitoes pollutes air. More than half of the families; 54.76% use smoke and rest 45.24% do not.

Temporary storage of food scraps particularly at nights with in house pollutes not only indoor air but also the cause of attraction of rodents specially cockroaches and mouse. In this regard 53.55% respondents informed that they dispose food scrapes just after dinner & 46.45% respondents dispose in the morning. Among them 87.09% respondents know food scraps attracts rodents though 12.90% respondents do not know. Access of flies and cockroaches to foods results in diseases know 90.32% respondents and 9.68% respondents do not. Poultry and cattle should be away enough from the dwelling house. It the study areas 90 families out of 155 do not have poultry. Among 90 families 30.77% people keep poultries in a separate sheds but attached to houses, 13.85%have sheds within the houses and 55.38%people keep poultries in separate sheds nearby the dwelling house. More than half of the families that is 85 out of 155 do not have domestic animal. Among 85 families 57.14%keep cattle and goats near by the house, 27.14% keep in a shed situated away from their houses but less than 25 feet away and only 15.72%keep 25 feet or more away from dwelling houses. Though more than half of the families do not have poultry or domestic animal but among the 155 respondents 72.26% are aware of the diseases that can be transmitted from cattle & poultries and 27.74% respondents are not aware of.

# Waste disposal

Waste disposal awareness along with good practice is essential in maintain health. In this regard half of the respondents that is 50.32% have no specific site of disposal. Rest half though dispose in specific areas but not ideal; 29.6% in canal near the house, 16.77% in pit hole and 3.22% in bushes. Knowledge in this regard is said to be good; 83.87% of the respondents know flies breed in garbage although 16.12% do not know. Only 84 families have domestic animals. 100% of them stores animal dung in open holes. Human excreta is potential source of infection and thus needs to be disposed properly in order to protect water, soil and ultimately environment. Study findings show that 48.39% of the respondents use Water seal latrine, 30.32% use septic tank and a significant number; 21.29% use open toilet.