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To Study the Sanitary Hazards of Non Pay Attention to Cleanness and Waste Dumping in Village Environment by Emphasizing on Disease Spreading Case Study: Villages of Bojnord Township

Parviz Kardavani[1], Ebrahim Amiri[*2], Seyed Rahim Moshiri[3], Masud. Mahdavi[4], Abbas Maroofnezhad[5]

[1,3,4] Ph.D., Assistant Prof., Department of Geography, Sciences and Research Islamic Azad university, Tehran, Iran
[2] Ph.D., Student, Department of Geography ,Sciences and Research Islamic Azad university, Tehran, Iran
[5] Member of Academic Staff, Department of Geography, Mahshaher Branch Islamic Azad University, Mahshaher, Iran

ABSTRACT

Social life in its social and natural forms, is accompanying unwanted materials which considered as waste. Whole materials which are resulted from activities performed in human residential environment and at least in form of solid and are considered unwanted, unusable and discarding by their owners are called waste of solid waste.
1-This article was extracted from PhD thesis (Ibrahim amiri , Student Of Islamic Azad University , Science and research branch, Tehran) titled "studying the effects of unsanitary disposal of waste on making environmental pollutions in villages of Bojnord township" to (Parviz Kardavani, PhD, assistant professor, department of Geography , Islamic Azad University, Science and research branch, Tehran)
Rural health considers fields of individual health of villagers and the health of rural environment by emphasizing on providing safe and healthy water, collecting and disposing wastes and biomasses by means of suitable method, providing sewage collecting system… in order to prevent emerging and spreading disease and increasing health level. North Khorasan province at northern east of country, and particularly Bojnord township is faced with various environmental problems in which the most important is unsanitary disposal of wastes and biomasses in rural areas. In this article, sanitary hazards of non pay attention to cleanness and waste dumping in village environment by emphasizing on disease spreading in villages of Bojnord Township are studied.
Study method is in form of descriptive-analytical by focusing on field study. Sample sizes are selected by Cochran s formulation and relative random sampling method was used. Data collection tool was questionnaire. In order to study common diseases resulted from unsanitary disposal of waste, after selecting 3 rural agglomerations of Aladagh, Raz and Gifan as sample, among 8 rural agglomerations (district) of this township, the disease of Brucellosis, Leishmanis Custanecus, Viscerna Leishmaniasis (Kala-Azar), Tuberculosis are considered. From data analysis by means of field, documentary, library and questionnaire studies, following results were acquired:
1- Brucellosis disease is the most spreading disease among sample rural agglomerations
2- The most important cause of spreading disease in sample rural agglomerations is domestic wastes and leaved and degradable materials in rural environment, dumping of biomasses and feeding animals from rural wastes.
KEYWORD: waste , rural health , spreading of disease , biomasses , unsanitary disposing

1-INTRODUCTION

Although scientific studying of villages had been considered for years as research field, precise attention only provided during current decades (Saeedi, 2005:1). One of the most important issue in rural environment which provided field to study and can be considered scientifically, is the issue of sanitary in rural environment. Rural cleanness means removing waste materials from village which weakens public health of village. Public health and cleanness of environment considers as one of the main factors of development which are necessary for individual and social health and welfare (Azkia, 2008:10). There is mutual and close relationship between health and development. The main concept of the term development is sustainable development which the most general definition provided for it in Brotland commission (world commission on environment and development)in 1988 is: "to meet present needs of societies without using future generation capabilities to meet their needs."(Nazar, 2000:2)

In most villages of country, there is no certain method for solid waste management and rural cleanness and waste materials are poured around residential places. In some villages, these materials are returned to environment by factors such as children, wind, water or animals.

***Corresponding Author:** Ebrahim Amiri, Ph.D., Student, Department of Geography ,Sciences and Research Islamic Azad university, Tehran, Iran

These waste materials are spread in such a way that systems cannot manage those (Jamshidi et al, 2011:55).

Bojnord Township consists of 3 distinct and 8 rural agglomeration in which 3 rural agglomeration of Aladagh, Raz and gifan were selected as sample. In villages of this township, various environmental pollutions can be observed which are existed in form of dumping of wastes, unsanitary transportation and disposing of wastes and domestic-agriculture wastes and biomasses that resulted in water pollution and this approach has great importance because the issue of water has particular status in the strategy of sustainable development (Brekhuysen, 2007:3). Generally, environmental problems are considered as serious threat for human generation maintenance in 21 century (Ibrahim, 2010:47).

In this article, some diseases resulted from inattention to cleanness and dumping of waste in sample rural agglomeration will be considered which are: Brucellosis, Leishmanis Custanecus, Viscerna Leishmaniasis (Kala-Azar), Tuberculosis.

Therefore, this study with the purpose of investigating and mentioning sanitary problems of under study areas of villages and spreading related diseases considers strategies which are suitable with natural, economic and social conditions and tries to answer following questions:

1- Does unsanitary disposal of waste in villages of Bojnord township lead to spread of disease?
2- Does lack of financial resources allocation to manage rural wastes decreases the success of sanitary disposal of waste and biomasses plan in villages of Bojnord Township?

2-**Study background:**

Very phenomenon has backgrounds which present condition and its situation depends on this background (Sarookhani, 1999:5).

There are several studies were done in Iran about above issues which are:

1- Darban, Astaneh (2008) : the studied issues in this reference are rural disposal or place of rural disposal of waste and totally include organizing development management of rural infrastructures.
2- Omrani and Alavi (2009) which considers various types of environmental pollutions resulted from non-normative disposal of waste and the pollution of water, soil, air and considers it s consequences.
3- Noori (2009): this reference while providing environmental terms studies the relationship between population and water and soil resources and in this regard considers the causes of water and soil resources pollution in macro level.
4- Hafezi Moghaddas and Ghafoori (2009) study the environmental geology issues. Environmental geology defined as “a science which investigates the relationship between geology conditions and human environment”, and in the following, water and it s pollutions and waste management are considered.
5- Allahabadi and Saghi (2011): In this study, locating and designing the place for rural disposal of wastes of Roodab distinct in Sabzevar were considered which in this article, the quality and quantity of waste and selecting the place for disposal of waste in Roodab distinct in Sabzevar during 1 year from summer 1384-spring 1385 were investigated.

3-**STUDY METHODOLOGY**

Study method is descriptive – analytical with emphasis on field survey. In order to collect data , as well as questionnaire , relative random sampling method was used in which sample size were selected from residential of villages of 3 rural agglomeration regarding their population in each village and were distributed according to table 1 and were selected by means of simple random sampling method. The under studied rural agglomerations are 3 rural agglomerations as sample from total of 8 rural agglomerations of this township.

In selecting agglomeration it is tried to consider the possibility of relative distribution in whole Bojnord Township.

Table1:research statistical population

Rural agglomeration	village	Village population	Ratio to total agglomeration(percent)	Sample size
Raz agglomeration	Pishindeh	1178	12	46
	Tangeh torkaman	1569	16	61
	Govinik	454	5	19
Aladagh agglomeration	Arkan	2783	29	110
	Mahnan	1341	14	53
	Taraghi kord	634	6/5	25
Gifan agglomeration	Ghale Mohammadi	665	7	27
	Izman Bala	532	5/5	21
	Izman Pain	453	5	19
sum		9609	100	381

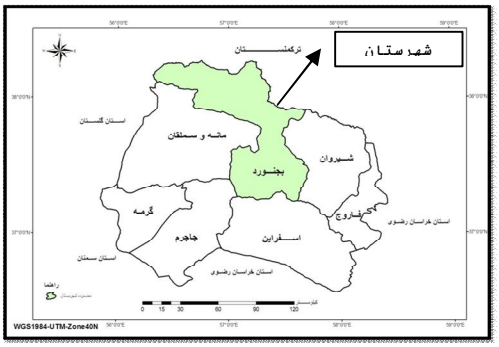
Reference: author, field study, 2011

After collecting data and information, the relationship between unsanitary disposal of waste and spreading disease in villages and also the relationship between dominant traditions of area and unsanitary disposal of waste were considered and analyzed by SPSS software.

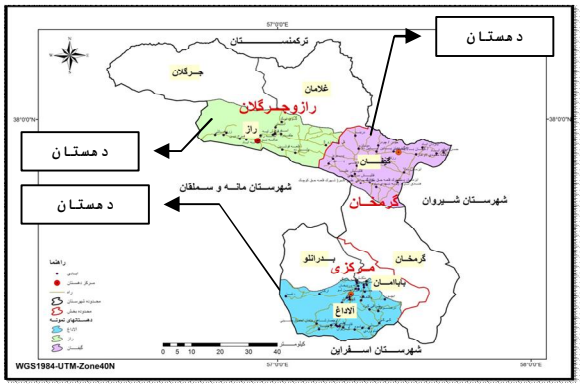
4-**Under studied area:**

Northern Khorasan province is one of provinces located at the northern east of country. Bojnord township , the capital of northern Khorasan is located in mountainous area lies between 19,56° - 43,57° longitude and 13,37°-17,38° latitude. This township with the area of 6563 km^2 is located at the center and is continued along north and northern west and from north, northern east and northern west is conterminous with Turkmenistan, from west is limited to Maneh and Samaghan city, from southern west to Jajarm city, from south to Esfarayen city and from southern east to Shirvan city. This township consists of 3 distinct and 8 agglomerations according to the last administrative divisions of Iran approved by ministry of interior in 1383. (Geographical organization, 2005:5).

Map 1: location of northern Khorasan province in country



Map2: the location of sample agglomeration in Bojnord township



Reference: investigation office of northern Khorasan governor : 2011

5-**Study descriptive information**:

According to country general population and housing census in 2006,414361 persons of rural population dwells in northern Khorasan province which consist 51 % of total population of province. From this population, 48/9 percent are male and 51/1 % are female. Among total rural population of province, most rural population belongs to Bojnord Township with 35% and the lowest population belongs to Jajarm Township with 5/84 percent.

According to country general population and housing census in 2006, the population of Bojnord Township is 328489 persons from which 183433 persons form urban population and 145056 persons are rural. According to table 2, in 2006 in sample agglomerations, Aladagh agglomeration with the population of 26264 persons has the most population which followed by Gifan and Raz with the population of 10522 and 6068, respectively.

Table2: population changes of Bojnord Township and sample agglomeration (1996-2006)

Bojnord township		**Aladagh agglomeration**	**Raz agglomeration**	**Gifan agglomeration**
year	Population per person	Population per person	Population per person	Population per person
1996	274722	23666	4658	9242
2006	328489	26264	6068	10522

Reference: general population and housing census in 1996-2006

The way of population growth in each country is affected by age and generic composition of population of that country, therefore, planning in order to achieve one balanced age and generic composition in each country should be considered. (Moteei Langroodi, 1994:42).

Table3: number of percent in main age group in sample agglomeration , year 2006

raw	Name of agglomeration	0-14 years old		15-64 years old		+65 years old		total	
		number	percent	number	percent	number	percent	number	percent
1	Aladagh	8657	32/96	16352	62/26	1255	4/78	26264	100
2	Raz	2069	34/10	3777	62/24	222	3/66	6068	100
3	Gifan	3676	34/94	6420	61/02	426	4/05	10522	100

Reference: general population and housing census -1385

Table 3 shows that among sample agglomerations, the most population between 0-14 years old are in Gifan agglomeration with 34/94 percent and the next is Raz with 34/10 % and the lowest is Aladagh with 32/96%. Age and generic composition of population are as invisible factors which have great effect on population growth and the way of preparing human resource, (Zanjani, 1990:38). Regarding table 4, the generic ration of sample agglomerations, Raz with the generic ratio of 102/5 is at the first place and after that Aladagh with 99/5 and finally Gifan with 96/6 % have lower generic ratios, respectively.

Statistics of table 4 about Gifan agglomeration, shows decrease in number of men rather than women which the reason can be referred to men´s migration to access job chances out of area.

Table4: generic ratio in sample agglomerations, 2006

raw	Name of agglomeration	man	woman	Generic ratio
1	Aladagh	13099	13165	99/5
2	Raz	3071	2997	102/5
3	Gifan	5169	5353	96/6

Reference: general population and housing census -2006

In population studies, in addition to define active population , employment and main activity groups and some features of workers , defining workers dependency to job main groups and defining their ratio to total number of workers in order to find capabilities and technological and scientific and professional skills of working population have great importance.(Taghavi , 1993:71)

According to information of table 5 , Aladagh with 9434 persons have the most number of workers which followed by Gifan with 4711 persons and the lowest is Raz with 1240 workers.

Table5: number of workers of sample agglomerations and bojnord township- 2006

raw	Definition/agglomeration	Total population	10years population or more	percent	Working population(per person)	Ratio of workers
1	Aladagh	26264	20894	79/55	9434	35/92
2	Raz	6068	4773	78/66	1240	20/44
3	Gifan	10522	8308	78/95	4711	44/77
4	Bojnord township	328489	10806	33/73	102036	31/06

Reference: general population and housing census -2006

6- Study inferential results:

6-1: disease resulted from lack of control on waste and biomasses:

6-1-1: Zoonotic diseases (with animal origin)

Brucellosis: is a infectious disease which appears in human in form of Brucellosis (undulant fever) and in animals in from of abortion.

Way of transmission:

Polluted provender and waste materials consist of some kinds of microbes which enter into animal body through digestion system. Infected animal transmits disease to human by its products.

The process of spreading disease in sample agglomerations:

According to table 6, it can be observed that in 2010, from total of 40 reported patients infected to Brucellosis in Whole Township, 24 persons were reported from sample agglomerations in which Aladagh with 20 patients had the most rate and each of Raz and Gifan with 2 patients placed at next stage in terms of infection to disease. By comparing the mentioned disease condition between the years of 2010-2011 it can be resulted that in 2011 from total of 33 reported disease in whole township , again , Aladagh agglomeration with 18 patients has the most patient population and Raz and Gifan with the same number of patients(2 patients) like last year , placed at second stage.

From table 6, it can be resulted that about spreading of Brucellosis disease particularly in Aladagh, more preventive actions should be done, because, this agglomeration regarding it s natural conditions and economic activities (animal husbandry) is prone to emerging this disease.

Table6: number of infected persons to brucellosis reported from sample agglomerations of Bojnord township during 2010-2011

Agglomeration/Year	Aladagh	Raz	Gifan	Township
2010	20	2	2	40
2011	18	2	2	33

Reference: field and documentary studies of author

6-1-2: spread of disease by rat and other rodents:

Rats can transmit various diseases to human, some believe that Rabies transmitted to dog by rats and then transmitted to human.

A) Leishmanis Custanecus :The origin of this disease are wild rodents and some types of small mammals such as rats which transmitted to human from infected animal through the bite of Phlebotomino sandfly .

Way of transmission:

Waste and biomasses are the place of feeding and living for rats (types of wild rodents) and some types of mammals. Animal is infected to parasite from nutrition place and then sandfly bites infected animal to parasite. Sandfly bites human after infects animal , therefore , human will be infected to fungal Leishmanis Custanecus disease . Leishmanis Custanecus disease is one of diseases which can be serious threat for human health , particularly villagers health in rural areas of northern khorasan province.

The process of spreading disease in sample agglomerations:

According to acquired results of field and documentary studies about spreading Leishmanis Custanecus disease in sample agglomerations in table 7 , followings were resulted:

In 2010, 30 persons infected to this disease were reported, while in 2011 this number increases to 32 persons.

In 2010 , from total number of 30 persons reported from whole township , 12 persons were reported from sample agglomerations which this number in 2011 , from total number of 32 infected patients were reported 14 persons from sample agglomerations. This shows increasing trend and spreading of disease in sample agglomerations.

Table 7 : number of infected persons to Leishmanis Custanecus disease reported from sample agglomerations of Bojnord township during 2010-2011

Agglomeration/Year	Aladagh	Raz	Gifan	Township
2010	6	3	3	30
2011	7	4	3	32

Reference: field and documentary studies of author

According to field analysis and studies, it is revealed that one of the main reason of spreading this disease is unsanitary disposal of waste and sewage and dumping of dung in studied areas.

B**) Viscerna Leishmaniasis (Kala-Azar):**

Viscerna Leishmaniasis is a rural disease which it s known origins are dog , cat , Reynard and wild rodents.

Way of transmission:

Wastes and biomasses are the feeding sources of stray dogs, cat, Reynard and wild rodents. Mentioned animals are infected to parasite disease when eating this materials. Sand fly bites infected animals and then became a carrier of parasite disease on human. This disease is transmittable until this parasite exist in wound and finally human will infect to Kala Azar disease.

The process of spreading disease in sample agglomerations:

About number of reported infected persons to Viscerna Leishmaniasis (Kala-Azar) in whole city and sample agglomerations during 2010-2011 , we can refer to table 8:

In 1389, from total number of 9 persons reported from whole city , 8 persons were from sample agglomerations which in comparison with 1390, from total number of 6 persons reported from whole city , 5 persons were from sample agglomerations.

Of course the spreading of this disease had relative decreasing trend in 2011 rather than 2010. Among sample agglomerations, Aladagh had the highest rate of patients.

Table 8 : number of infected persons to Viscerna Leishmaniasis (Kala-Azar) disease reported from sample agglomerations of Bojnord township during 2010-2011

Agglomeration/Year	Aladagh	Raz	Gifan	Township
2010	6	1	1	9
2011	2	1	2	6

Reference: field and documentary studies of author

Also , some studies were done about other transmitted diseases from rats and other rodents such as :plague , rabies , kinds of fungal- parasite – helminthiasis diseases , food borne illness (when more than 2 persons consuming one food , become poisoned , food borne illness are reported), fever resulted from rat- bite fever , recurrent fever (Tularemia) and murine typhus fever, but no reports were found about these diseases in sample agglomerations.

6-1-3: transmitted diseases from house fly and cockroach:

House fly is an insect which laying egg in 75-150 sets in gaps and cracks of spoiled feed and biomasses. House fly can result some diseases in human such as Tuberculosis, Typhoid fever , Trachoma , types of diarrhea ,.. By physical and mechanical transmission of a lot of bacteria and parasites. According to performed studies, spreading of mentioned disease increases by increasing number of house flies.

Also, cockroach is an insect which considers as suitable transmitter of disease, since regarding it s nutrition and way of feeding, always go and feed from polluted places. Cockroaches can be as carriers of pathogenic factors such as viruses, bacteria or parasite eggs. It is obvious that transmission performed only mechanically. Pathogenic factors which isolated from cockroach body are: Tuberculosis, Tetanus, types of Diarrhea, 4 types of Poliomyelitis, 40 types of bacteria and 2 types of fungi.

Tuberculosis:

Tuberculosis is a disease and it s known sources are cockroach and house flies. Mainly, on time visiting has great importance in recognizing and treatment of Tuberculosis disease because each tubercular patient annually can infect 10-15 persons if would not cure. Each tubercular patient , if does not receive medicine of if treatment was incomplete , resistance to medicine created in patients body which the costs of treatment of this patients become multiple rather than normal patients and will reach to 250 billion tomans in comparison with 200000 tomans for treatment in normal cases.

Way of transmission:

Two insects of house fly and cockroach play important role in transmitting and spreading Tuberculosis disease which it s mechanism and spreading process were explained before.

The process of spreading disease in sample agglomerations:

According to table 9 in 2010, from total number of 41 infected patients in this township, it can be said that about half of them ,i.e ,19 persons were reported from sample agglomerations and in 1390, from total number of 32 infected patients to Tuberculosis, 11 persons were reported from sample agglomerations and recorded. Of course, in both two continual years, Aladagh with 17,10 patients ,respectively, had more reports.

Table 9: number of infected persons to tuberculosis disease reported from sample agglomerations of Bojnord township during 2010-2011

Agglomeration/Year	Aladagh	Raz	Gifan	Township
2010	17	0	2	41
2011	10	0	1	32

Reference: field and documentary studies of author.

6-3: answering study questions:

According to mentioned issues, in order to answer present study questions by SPSS software, following points were resulted:

1- Does unsanitary disposal of waste in villages of Bojnord township lead to spread of disease?

About unsanitary disposal of waste and biomass in villages of Bojnord Township, the most important sanitary problem is the way of domestic waste disposal which have the most frequency. Transmission of waste to inner part of villages in unsanitary form and children reach to waste and biomass is high in villages. About diseases resulted from non-controlling waste , infected patients to Brucellosis in sample agglomeration in 2011 from total number of 33 infected persons were reported 22 persons in sample agglomeration, formally. Infected patients to leishmanis custanecus in 2011, from total number of 32 infected persons, were reported 14 in sample agglomerations, formally. About spread of Kala- Azar disease in sample agglomerations in 2011 , from total number of 6 patients reported in township , 5 persons were recorded from sample agglomerations and finally patients infected to tuberculosis microbe in 2011 , from total number of 32 persons reported in township , 11 persons were from sample agglomerations. Studying the relationship between unsanitary disposal of wastes and common diseases in villages of Bojnord Township was shown in tabe10.

Table10: studying the relationship between unsanitary disposal of waste with common diseases of villages of Bojnord Township

parameter		Sanitary drinking water	Not collecting waste	Sanitary bathroom	Lack of waste bucket in street	Dumping of biomass	sum
brucellosis	number	66	84	9	32	12	203
	percent	17/3	22	2/4	8/4	3/1	53/3
Leishmanis custanecus	number	15	30	0	6	0	51
	percent	3/9	7/9	0	1/6	0	13/4
Viscera leishmaniasis (Kala-Azar)	number	16	26	0	12	0	54
	percent	4/2	6/8	0	3/1	0	14/2
tuberculosis	number	31	29	0	5	8	73
	percent	8/1	7/6	0	1/3	2/1	19/2
sum	number	128	169	9	55	20	381
	percent	33/6	44/4	2/4	14/4	5/2	100
The lowest significance level 0/003			The rate of Chi test 29/42		Degree of freedom(df):12		

Reference: author estimation.2011

Regarding the lowest significance level acquired from table 10,(sig:0.05> 0.003) and the amount of X^2 test(29/42) which is higher than number of critical table (21/3) , there is significant relationship between unsanitary disposal of wastes and common diseases in villages of Bojnord township.

2- Does lack of financial resources allocation to manage rural wastes decreases the success of sanitary disposal of waste and biomasses plan in villages of Bojnord Township?

According to acquired data about decrease of success in sanitary disposal of wastes and biomasses management system by district governor, it can be mentioned that waste collecting by district governor is performed to somewhat, but, the way of waste and biomass collecting, none regularly, has the most frequency.

About the reason of unsuccessfulness of rural sanitary waste disposal system , from one hand , lack of special financial resources of government is mentioned which regarding financial discussion of waste management , by comparing the articles of association on municipal waste management organization with articles of association of organizations and district governors organizations, we can result that the plan of municipal waste management is performing successfully , because it has certain financial resources and annual budget support which provided by government , while, the plan of rural waste management has no certain status and no governmental financial resources is provided for current costs of plan for rural waste management and the result is unsanitary disposal of waste and provide environmental pollution in rural areas.

Table11 shows the relationship between unsuccessfulness of unsanitary disposal of waste and biomasses management system with lack of government special financial resources.

Table11: studying the relationship between unsuccessfulness of sanitary disposal of waste management system with lack of government special financial resources in villages

parameter		Not approved	weak	average	good	best	sum
Lack of villagers cooperation with district governor	number	12	14	7	2	0	35
Lack of government special credits allocation to waste issue	percent	3/1	3/7	1/8	0/5	0	9/2
Not existence of collectable waste in village	number	88	48	13	5	3	157
Not regular collecting of public aids	percent	23/1	12/6	3/4	1/3	0/8	41/2
Independency of district governors and relying on public aids and lack of villagers cooperation with district governor	number	4	2	0	3	0	9
	percent	1	0/5	0	0/8	0	2/4
Lack of government special credits allocation to waste issue	number	38	26	5	5	1	75
Not existence of collectable waste in village	percent	10	6/8	1/3	1/3	0/3	19/7
Not regular collecting of public aids	number	50	32	10	12	1	105
	percent	13/1	8/4	2/6	3/1	0/3	27/6
sum	Number	192	122	35	27	5	381
	percent	50/4	32	9/2	7/1	1/3	100
The lowest significance level 0/048			The rate of Chi test 26/43		Degree of freedom (df):16		

Reference: author estimation.2011

Regarding the lowest significance level acquired from above table,(sig:0.05> 0.048) and the amount of X^2 test(26/43) which is higher than number of critical table (26/30) , there is significant relationship between unsuccessfulness of sanitary disposal of wastes and biomasses management system with lack of government special financial resources.

7- **Conclusion and recommendation**:

The most important sanitary problem of villages of area first is waste collecting (figure1) and then id healthy drinking water. According to study was done about common diseases in sample agglomerations of Bojnord township, it is revealed that there is significant relationship between common diseases of villages of Bojnord township with inattention to environmental health and unsanitary disposal of wastes and biomasses. One of the main factor of spreading leishmanis custanecus in area is unsanitary disposal of waste. Waste and biomasses of villages in area , because remain for a long time in first place , considers as very suitable place for growing and reproducing of sand fly , house fly and Vermin and then spreading pollution. Burning and dumping waste and biomass particularly in warm season , resulted in air pollution and dispersion of unpleasant odor in some villages of area. The way of collecting waste and biomasses by district governors is very irregular. The distance between house and the place of keeping animals must be lower than 5m which itself is a cause of disease. Waste and biomasses are in reach of children and domestic and not domestic animals, largely.
High percent of villagers prepare their consumed meat by domestic slaughter which most of these animals are infected by eating waste (figure2).

Figure1:waste of village near houses and domestic animals

Figure2:waste and biomasses near water source and domestic animals

Reference: author . 2011

Therefore, regarding acquired results, following recommendations will be presented:

1- Organizing water channels
2- Correct disposal of waste
3- Removing disused places
4- Collecting stray dogs and animals
5- Destroy ruined building
6- Keep health places for animals
7- Organizing sewages
8- The best way to prevent continuing traditional methods of transmission and disposing of biomasses is isolating the place of keeping animas from residential area by officials of villages affairs.
9- Biomasses must be collected from streets as soon as possible and transmitted to out of village in order to prevent unsanitary problems in villages
10- Dumping biomasses create heat about 60-70 ° c in the center of pile which spoil egg and larva of house fly. Dumping biomasses should be done out of village.

11- In villages which use biomasses in form of feces for fuel , the land should prepare in suitable distance and far from houses for this reason and prevent from preparing feces near houses and stick to houses walls.
12- The thickness of feces should be very little in order to dry soon and house flies and insects would not grow in it.
13- biogas: people can dump biomasses , domestic wastes and agriculture waste into storage. After some time, components of tank releases Methane , itself. This gas can be used in homes for cooking and making heat or as fuel to reinforce engine or electric generator. The theory of using biogases produced by cows and using it as most effective cycle of energy is very pleasant. (Vadastrup , 2009:27). The main substance of biogas in farms is biomasses , but other materials such as waste of food and waste of fruits can increase producing of biogas.(Rogstrand, 2009:2). The primary net biogas consists of some CO2 and other impure materials such as H2S and steam which most of these impure materials should be removed by cleaning process.(Andres , 2007 :3)
14- using biomasses as compost fertilizer
15- government special credits should be allocated for rural waste management.
16- To increase security coefficient and quality of water and preventing from pollution of underground water supplies , residential areas should be equipped with rural sewage system.

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