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The role of water and hygiene project of Integrated Regional Support Programme (IRSP) in district swabi, khyber pakhtunkhwa

Abstract

This internship report conducted in 2016, with the objectives to learn the work environment in the development organization and to study the role of water and hygiene project of Integrated Regional Support Programme (IRSP) in district Swabi, Khyber Pakhtunkhwa. For this, data was collected by the internee and the field staff of the host organization. Total households residing in the camp were selected as the respondents for this study which is 130. Descriptive statistics were used for analysis of the data. Result of the study revealed that 38.09% were female and 37.86% are male and lies in the age group of above 20 years while data responding literacy level reveals that 30.15% of the respondents were literate, mostly having primary level of education. The data reveals that 49.05% buffaloes were kept by the household. Further data shows that 35.87% of the people are using their own private sources of water, while 64.13% of the people are using public sources of water. At household level 33% water are store in water cooler for drinking purpose, while 43% water are store in jerry cans for other purposes. Further data reveals that 76.15% people cleaning their drinking water storage source daily. The data reveals that 15.39% treat their water, while 84.61% not treat their water due to 53.64% source are clean. 66.92% have accessibility to safe drinking water, while 33.08% have no accessibility to safe drinking water. Further data shows that 35.13% households suffered from diarrhea lied in the age group of above 16 year, while 1.53% is died due to diarrhea. It is found that 34.62% food quality is the reason of diarrhea, while expenditure on diarrhea cure is 34% which is 2000-5000. Further data shows that 18.40% wash hand with soap after working with animals, while 11.33% wash hand without soap after working with animals. It is found that 15.39% households have hand washing place, while 84.61% have no hand washing place. The data reveals that 23.08% have available soap at hand washing place, while 76.92% have no available soap at hand washing place.

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Introduction

Safe drinking water and hygienic sanitation are prerequisites for health. Unfortunately, there are about 884 million people in the world who do not get their drinking water from improved sources, and about 2.6 billion people are living without adequate sanitation.[1] globally, the levels of availability and accessibility of safe drinking water are measured by standard indicators that depend on the presence of proper sanitary sources. These improved drinking water sources include household connection, public standpipe, borehole condition, protected dug well, protected spring, and rain water collection. Sources that may represent potentially contaminated drinking water include unprotected wells, unprotected springs, rivers or ponds, vender-provided water and tanker truck water.[2] Researchers and health experts usually explain that insufficient supply of clean and safe drinking water is the main cause of diseases in developing countries.

In Pakistan, only 66 percent of the population is considered to have access to safe drinking water with huge disparities between urban and rural areas and among provinces/regions. Safe drinking water in rural areas is a precious commodity. Inadequate quantity and quality of the supply of drinking water results in a high incidence of water related diseases, which in turn, increase morbidity and mortality rates and pose a major threat to the survival and development of children.[3] International monitoring organizations define "access" to safe drinking water as the availability of at least 20 liters per person per day from an "improved" source within 1 kilometer of the user's dwelling,[4] but such sources are rarely available in some areas. According to the Global Water Supply and Sanitation Assessment report by WHO and UNICEF, in Pakistan, around 30 percent of illnesses and 40 percent of deaths are attributed to inadequate water quality. Water quality in areas of poor sanitation and poor hygiene is related to the density of population–where, population is dense under such circumstances there is likely to be more contamination of water sources.[1] It has been estimated that on yearly basis, more than 3 million people in Pakistan suffer from cholera and other diarrheal diseases caused by poor water quality and about 20-40 percent of hospital beds in Pakistan are occupied by patients suffering from water-borne diseases.

In Pakistan, the mortality rate for children under age five is 101 deaths per 1,000 children.4 Diarrhea is responsible for 11 percent of deaths for children under five years. The main causes of diarrhea in children are unsafe drinking water, inadequate sanitation, and poor hygiene. Diarrhea is also a significant cause of under nutrition and can affect a child's overall health. Unsafe drinking water also has a disproportionate effect on the poor. The combination of consumption of unsafe water and poor hygiene practices causes hardships, as it leads to high-cost treatments for waterborne illnesses and decreases both economic productivity and educational achievement (due to reduced

school attendance by children). The presence of improved sanitation facilities is very low in rural areas—about 35 percent. According to the Demographic Health Survey,[5] 22 percent of Pakistani children under age five had an episode of diarrhea during the two-week period before the survey, and about 30 percent of Pakistanis practice open defecation (above the world average, which is 18 percent).[6]

According to the Federal Bureau of Statistics,[7] in Khyber Pakhtunkhwa province, lack of access to safe water and poor sanitation are key contributors to under-nutrition. Both lead to a chronic cycle of illness and under-nutrition, and infants and young children are particularly susceptible. The province has marginally lower levels of safe water usage by household (70%) as compared to the national level (87%). Use of hygienic sanitation facilities is also slightly lower (62%) than the national level (66%). In January 2010, a survey by Khyber Pakhtunkhwa[8] Provincial Reforms Program show that the water source situation in southern Khyber Pakhtunkhwa is inadequate because the land water aquifers are either quite deep (more than 500 ft) or the existing water is salty and hence unhealthy for drinking. As a consequence there is an elevated dependence on high-risk sources including ponds, insecure springs and/or local streams which are open to contamination.

Both the planning and undertaking of comprehensive research on water and hygiene promotion issues among refugee populations has remained a challenge. Reasons include security restrictions, complex operational conditions, scarce resources, understaffing or high staff turn-over, the difficulty of undertaking thorough measurements during emergency situations and the fact that refugee camps are often forcibly located on marginal lands. Hence, these very real constraints hinder efforts by water and health professionals to systematically document and build on lessons learnt in order to improve services in these areas in subsequent refugee operations. It has also meant that all the available time and resources are needed simply keeping water supply and sanitation control mechanisms functioning and so the need for research is overlooked. This internship report aims to outline the current water and hygiene situation in refugee camp of district Sawabi. A base line survey of IRSP at the refugee household level was used to investigate the aforementioned problem.

Objectives of the internship report

The overall objective of this internship report is to assess the water and hygiene situation in Barakai camp of district Swabi, Khyber Pakhtunkhwa. The specific objectives are as follow;

1. To assess the existing situation of water and hygiene facilities in the study area
2. To investigate water-borne diseases in the study area
3. To find out the problems of refugee households with respect to water and hygiene facilities
4. To suggest recommendations on the basis of findings

Internship report methodology

This chapter explains the methodology used to answer the internship research objectives and the actual work performs by the Integrated Regional Support Program (IRSP) at the field level. This chapter comprises of universe of the study, sample selection, sample size, sample respondents, data collection and its analysis.

Universe of the study

The study was carried out in Barakai camp of district Swabi, Khyber Pakhtunkhwa. The Barakai camp is comprised of 130 Afghan refugees, families. The study involved the Afghan refugees, families living in the target camp. Afghan refugees of this camp were served as population of the study.

Sample selection

Sample respondents

Total households residing in the camp were selected as the respondents for this study which 130.

Data collection

For collection of data, face to face interview schedule was used which is developed in english language for academic purpose, but exercised in pushto language for understanding of the respondents, to solicit the required information correctly. The internee and the field staff of the host organization conducted interview and each respondent was interviewed on individual basis. In total, 130 household heads were respondents to the survey.

Data analysis

After the collection of data, it was analyzed by using descriptive statistics by using Micro Soft Excel 2007.

Results and discussion

This chapter deals with results and discussion with respect to the "Assessment of water and hygiene situation in Barakai camp of district Swabi, Khyber Pakhtunkhwa" executed by Integrated Regional Support Programme (IRSP).

Age wise distribution of the sampled respondents

Age is an important factor in the demographic analysis of an individual's life because the responsibilities of a person vary with the age. Table 1 show that 27.60%, 34.42 % and 37.98% household members lied in the age groups of less than 5 year, 5-20 year, and of above 20 year, respectively. The data reveal that majority of the household members lie in the age group of above 20 year which shows that most of the population in the camp was of young age.

Table 1 Age wise distribution of the sampled respondents

Age group (Years)	Frequency	Percentage
Less than 5	36	27.6
May-20	45	34.42
Above 20	49	37.98
Total	130	100

Distribution of sampled respondents by educational level

Education plays an important role in individual personality grooming and development and also plays a vital role in nation' future building. The data in Table 2 shows that 28.57% of the household were illiterate, while 30.15% were literate. Of the total literate respondents, 25.40%, 8.73%, 5.55% and 1.60% had primary, secondary, higher secondary and above secondary level education, respectively. This shows that literacy rate of the area was 30 percent which is low. The data also further reveals that most of the people having primary level of education which further show the low level of educational status of the respondents. Moreover, the least number of respondents had above higher secondary level education.

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Table 2 Distribution of the sampled respondents by educational level

Educational Level	Frequency	Percentage
Illiterate	36	28.57
Literate	38	30.15
Primary	32	25.4
Secondary	11	8.73
Higher secondary	7	5.55
Above secondary level	2	1.6
Total	126	100

Sex-wise age distribution of the sampled households

Table 3 indicates that there were total of 674 household members, of which 338(50.14%) were male and 336(49.86%) were female members. Out of the total male, 28.40%, 33.74% and 37.86% were in the age of less than 5 year, 5-20 year, and of above 20 year, respectively. Similarly, out of the total female family members, 26.78%, 35.11% and38.09% was in the age group of less than 5 year, 5-20 year, and of above 20 year, respectively. It shows that majority of the households are female and lies in the age group of 5-20 years.

Table 3 Sex-wise age distribution of the sampled households

Age grou-p(years)	Male household members		Female household members		Total
	Frequency	Percentage	Frequency	Percentage	
Less than 5	96	28.4	90	26.78	186
43952	114	33.74	118	35.12	232
Above 20	128	37.86	128	38.1	256
Total	338	100	336	100	674

Livestock Possession

Livestock rearing is an important source of rural livelihoods and serves as an important asset at household level. Livestock provide milk, milk products (yogurt, butter, butter oil etc.) and other by-products. Table 4 shows that, 106 different types of livestock were kept by the sampled respondents at household level. Out of the total livestock types, 49.05%, 2.83 %, 36.8 % and 11.23 % were buffaloes, cows, goats /sheeps and other, respectively. The results revealed that buffalos were the major type of livestock followed by goats/sheep in the study area.

Table 4 Different types of livestock kept by the sampled respondents

Livestock Types	Frequency	Percentage
Buffaloes	52	49.05
Cows	3	2.83
Goats /Sheep	39	36.8
Others	12	11.32
Total	106	100

Drinking water sources in the study area

Four types of drinking water sources were found in the study area which includes piped, protected dug well, unprotected dug well, and hand pump. Table 5 shows the data regarding drinking water sources in the study area. It was found that that about 46% of the households were using piped water as the main source of available drinking water. About 28% of the households reported that they obtain drinking water from the hand pumps. Among the households, 17% were getting drinking water from the protected dug wells. However, 9% of the households explained that they obtain water from unprotected dug well. The data revealed that majority of the households obtained piped water followed by hand pumped water.

Table 5 Sources of drinking water in the study area

Water sources	Frequency	Percentage
Piped	60	46
Protected dug well	22	17
Unprotected dug well	12	9
Hand pump	36	28
Total	130	100

Monthly tariff of water

Table 6 indicates that 15% households used free water with no tariff while 11 %, 22 % and 52 % households paid a monthly water tariff of Rs. 50-150, Rs. 151-250 and above Rs. 250, respectively. The results revealed that drinking water is not free of cost for majority of the households in the camp and it was also found that majority of households were paying a monthly water tariff of above Rs. 250.

Table 6 Monthly tariff of water in the study area

Amount (Rs.)	Frequency	Percentage
None/Free	19	15
50-150	14	11
151-250	29	22
Above 250	68	52
Total	130	100

Drinking water fetching responsibility among the sampled households

Table 7 shows the data regarding drinking water fetching responsibility among the sampled households. It was found that 4%, 90% and 6% of men, women and children were involved in water fetching in the study area. It shows that majority of women have drinking water fetching responsibility in the study area. It is common observation that in developing countries and especially refugee women fetches water for drinking and other domestic purpose.

Table 7 Drinking water fetching responsibility among the sampled households

Household member	Frequency	Percentage
Men	5	4
Women	117	90
Children	8	6
Total	130	100

Drinking water fetching frequency per day

Table 8 denotes that 6%, 56%, and 37% households fetched water once, twice and more than twice per day in the study area. The results

indicated that majority of the households fetch drinking water twice per day followed by more than twice a day. It further reveals that the households used fresh water for drinking that's why they fetched drinking water more than once in day.

Table 8 Drinking water fetching frequency per day

Response category	Frequency	Percentage
Once	8	6
Twice	74	57
More than twice	48	37
Total	130	100

Water storage methods at household Level

Method of water storage at household level is divided in to seven categories; container with lid, container without lid, water tank on roof, drum, jeri cans, water cooler, and pitcher. Table 9 shows that at household level drinking water was stored in the above mentioned storage containers. The result shows that 6.31%, 1.94%, 0.49%, 13.6%, 32.52%, 33%, 12.14%, of the households used container with lid, container without lid, water tank on roof, drum, jeri cans, water cooler and pitcher, respectively for drinking water storage at household level. Water for other domestic purposes was stored in container with lid (4.14%), container without lid (5%), water tank on roof (3.59%), drum (29.53%), jeri cans (43%), water cooler (5.42%) and pitcher (9.32%). The results indicate that drinking water was mostly stored in jeri cans followed by drum. For domestic purpose, water was also mostly stored in jery cans and drums.

Table 9 Water storage methods at household level

Methods of water storage	Drinking water		Water for other domestic use		Total
	Frequency	Percentage	Frequency	Percentage	
Container with lid	13	6.31	8	4.14	21
Container without lid	4	1.94	9	5	13
Water tank on roof	1	0.49	7	3.59	8
Drum	28	13.6	57	29.53	85
Jeri cans	67	32.52	83	43	150
Water cooler	68	33	11	5.42	79
Pitcher	25	12.14	18	9.32	43
Total	206	100	193	100	399

Drawing method of drinking water from the storage source

The drawing method of drinking water from the storage source were divided into four categories dipping a glass/jug or mug, long handle scoop, taps and other. Table 10 shows that 62%, 4%, 28% and 6% households draw drinking water from the storage source by using dipping a glass/jug or mug, long handle scoop, taps, and other, respectively. The results indicate that at household level drinking water was drawn from the storage source by using a glass/mug or jug. The second major drinking water drawing method was the use of taps in the study area.

Table 10 Drawing method of drinking water from the storage source

Response category	Frequency	Percentage
Dipping a glass/jug or mug	80	62
Long handle scoop	5	4
Taps	37	28
Other	8	6
Total	130	100

Hand touches while drawing drinking water

Table 11 represents the data regarding carefulness of drinking water drawl from the water storage source in the study area. It was found that in 34% household's hands touched while drawing water from the storage source. However in 66 % households hand did not touch the water while drawing it from the storage source. It shows that although majority of the households were careful while drawing drinking water from the storage source still 34 % were not careful. Their hands touched the water thus the chances of water contamination increased which further increase the incidence of water borne diseases in the study area.

Table 11 Hand touches while drawing drinking water

Response category	Frequency	Percentage
Yes	44	34
No	86	66
Total	130	100

Cleaning interval of drinking water storage source

The interval of cleaning of drinking water storage source at household level is divided into four categories; daily, once a week, once a month, and never. Table 12 shows that 76 %, 15 %, 7% and 2% households clean the drinking water storage source daily, once a week, once a month , and never, respectively. The data reveals that majority of the households clean the drinking water storage source daily which is good to decrease the incidence of water borne diseases. Moreover, majority of the households used jeri cans for drinking water storage so it is quite easy for them to clean it daily.

Table 12 Cleaning interval of drinking water storage source in the study area

Response category	Frequency	Percentage
Daily	99	76
Once a week	19	15
Once a month	9	7
Never	3	2
Total	130	100

Reasons of long interval of water storage source cleaning

Table 13 indicates that 52%, 30% and 18% households took long intervals for water storage source cleaning due to the reasons of water is already clean, time shortage and no means of cleaning, respectively. the results revealed that the major reason or perception that water is clean prevail in the study area due to which the households took long

intervals or did not even clean the water storage sources in the study area.

Table 13 Reasons of long interval of water storage source cleaning

Response category	Frequency	Percentage
Water is clean	14	52
Time shortage	8	30
No means	5	18
Total	27	100

Treatment of drinking water

Treatment of water is very necessary in daily life to avoid water borne diseases and for good health. Table 14 represents the data regarding drinking water treatment at household level. It was found that 15% of the household treat drinking water while, 85% did not treated there water. The results indicate that a vast majority of the household did not treat drinking water which further increasing the chances of water borne diseases. The boiling method was mostly used for drinking water treatment.

Table 14 Treatment of drinking water in the study area

Response category	Frequency	Percentage
Yes	20	15
No	110	85
Total	130	100

Reasons of not drinking water treatment

Table 15 represents the data regarding reasons of not treating drinking water in the study area. a total of five reasons (i.e. doesn't smell, no colour, no taste, source already cleaned and other) were identified due to which households did not treat drinking water. It was found that 6%, 2%, 22%, 54% and 16% households were of the view that water have no smell, no colour, no taste, water source are clean and others, respectively. It shows that majority of the households did not treat drinking water due to their perception that water storage source was cleaned so the water will be also clean. The second major reason was that water taste was not disturbed so the water needs no treatment. It overall indicates that households were not aware about the importance of drinking water treatment.

Table 15 Reasons of not drinking water treatment

Response category	Frequency	Percentage
Doesn't smell	7	6
No colour	2	2
No taste	24	22
Source cleaning	59	54
Others	18	16
Total	110	100

Age of household suffered from diarrhea

Diarrhea disease is common in everywhere which is mainly epidemic and water borne. Table 16 shows that a total of 111 household members were suffered from diarrhea in the study area. Out of the total suffered household members, 34%, 31% and 35% household members lied in the age group of less than 5 year, 5-16 year and above 16 year, respectively. It shows that majority of the household members suffered from diarrhea lied in the age group of above 16 year.

Table 16 Age of household suffered from diarrhea

Age group (year)	Frequency	Percentage
Less than 5	38	34
May-16	34	31
Above 16	39	35
Total	111	100

Death cases due to diarrhea

Table 17 shows that 1.53% household reported death cases due to diarrhea and 98.47% of household reported no death occurrence. Majority of household have not reported death occurrence.

Table 17 Death cases due to diarrhea

Response category	Frequency	Percentage
Yes	2	1.53
No	128	98.47
Total	130	100

Treatment methods in case of diarrhea

Treatment of diarrhea is very important because death occur due to this disease. Table 18 shows treatment methods in case of diarrhea among the sample households. The data reveal that 4%, 9%, 14%, 8%, 9%. 8%, 46% and about 2% households treated diarrhea by nothing, ORS intake, home-made fluid/drink, pill or syrup, injection, home remedies/herbal medication, consulting a doctor and other, respectively. It was found that majority of the households consulting a doctor in case of diarrhea.

Table 18 Treatment methods in case of diarrhea

Response category	Frequency	Percentage
Nothing	5	4
ORS intake	12	9
Home-made fluid/drink	18	14
Pill or syrup	11	8
Injection	12	9
Home remedies/herbal medication	10	8
Consulting a doctor	60	46
Other	2	2
Total	130	100

Expenditures on diarrhea

Expenditure on diarrhea cure is divided in to five categories, less than Rs. 500, Rs. 500-2000, Rs. 2001-5000, Rs. 5001-10000, and above Rs. 10000. Table 19 shows that 10%, 28%, 34%, 13%, and 15%

households spend less than Rs. 500, Rs. 500-2000, Rs. 2001-5000, Rs. 5001-10000, and above Rs. 10000, respectively. Majority of the household expend above 10000 on diarrhea cure which is quite high.

Table 19 Expenditures on diarrhea

Response category	Frequency	Percentage
> 500	10	10
500-2000	28	28
2001-5000	34	34
5001-10000	13	13
Above 10000	15	15
Total	100	100

Possible reasons of diarrhea

Table 20 indicates that 35%, 24%, 4%, 11%, and 27%, households identified the possible reasons of diarrhea food quality, dirty water, food flies, dirty hands and other, respectively. The data reveals that majority of the households have diarrhea due to improper food quality followed by dirty water.

Table 20 Possible reasons of diarrhea

Response category	Frequency	Percentage
Food quality	45	35
Dirty water	31	24
Food flies	5	4
Dirty hands	14	11
Other	35	27
Total	130	100

Time of hand washing with soap or without soap

The time of hand washing with soap or without soap are divide in to seven categories, before eating, before cooking, after using toilet, after cleaning house, after working with animals, after cleaning the child and other. Table 21 indicate that there were total 163(35.20%) household wash hand with soap and 300(64.80%) household wash hand without soap. Out of the total 12.89% wash hand with soap before eating, and 34% wash hand without soap before eating, 9.81% wash hand with soap before cooking, and 17.67% wash hand without soap before cooking, 36.20% wash hand with soap after using toilet, and 16.33% wash hand without soap after using toilet, 10.43% wash hand with soap after cleaning house, and 10.67% wash hand without soap after cleaning house, 18.40% wash hand with soap after working with animals, and 11.33% wash hand without soap after working with animals, 11.66% wash hand with soap after cleaning the child, and 8.33% wash hand without soap after cleaning the child, and 0.61% wash hand with soap after other working and 1.67% wash hand without soap after other working.

Table 21 Time of hand washing with soap or without soap

Time of hand washing	With soap		Without soap		Total
	Frequency	Percentage	Frequency	Percentage	
Before eating	21	13	102	34	123
Before cooking	16	10	53	18	69
After working with animals	30	18	34	11	64
After cleaning the child	19	12	25	8	44
Others	1	1	5	2	6
Total	163	100	300	100	463

Hand washing place

Table 22 shows the hand washing place of the household, near the toilet 6.92%, near the kitchen 8.47% and none 84.61%. Majority of the household have no hand washing place which is 84.61%.

Table 22 Hand washing place

Response category	Frequency	Percentage
Near the toilet	9	6.92
Near the kitchen	11	8.47
None	110	84.61
Total	130	100

Availability of soap at hand washing place

Availability of soap at hand washing place is very necessary. Table 23 shows that 23.08% soap is available at hand washing place and 76.92% soap is not available at hand washing place. Majority of the household have no soap at hand washing place which is 76.92% due to poverty.

Table 23 Availability of soap at hand washing place

Response category	Frequency	Percentage
Yes	30	23.08
No	100	76.92
Total	130	100

Overall cleanliness of the house

Overall cleanliness of the house is very important. Table 24 sows that there were total of 780 household members, of which 216 (27.69%) were clean the house good, 386(49.49%) were clean the house average and 178(22.82%) were clean the house poor. Out of the total good, 20.83%, 18.52%, 6.94%, 17.13%, 15.28% and 21.30%, clean the house, kitchen, latrine, family members, children and water containers, respectively. Similarly, out of the total average, 15.54%, 17.36%, 18.66%, 16.59%, 14.24% and 17.61%, clean the house, kitchen, latrine, family members, children and water containers, respectively. Similarly, out of the total poor, 14.04%, 12.92%, 24.15%, 16.30%, 23.60% and 8.99%, clean the house, kitchen, latrine, family members, children and water containers, respectively. It shows that majority of the households clean the house average which is 52.26%.

Table 24 Overall cleanliness of the house

House portions	Good	Percentage	Average	Percentage	Poor	Percentage	Total
House	45	20.83	60	15.54	25	14.04	130
Kitchen	40	18.52	67	17.36	23	12.92	130
Latrine	15	6.94	72	18.66	43	24.15	130
Family members	37	17.13	64	16.59	29	16.3	130
Children	33	15.28	55	14.24	42	23.6	130
Water containers	46	21.3	68	17.61	16	8.99	130
Total	216	100	386	100	178	100	780

Conclusion

From the findings of the study it is concluded that most of the households used piped water for drinking. Drinking water was stored in jerry cans which were cleaned on daily basis. Drinking water was drawn from the storage source by dipping mug/jug or glass which increased the chances of water contamination. While drawing water from the water source mostly households were not careful. Water storage sources were mostly cleaned on daily basis with water application. Majority of the households did not treat water to avoid contamination and water borne diseases due to their perception that water is already clean. Most of the household members suffered from diarrhea with including adults and children. Diarrhea was cured by consulting a doctor with high treatment expenditures in the study area.

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None.

Conflict of interest

The author declares that there is no conflict of interest.

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