

**CERTIFICATION FOR THE
FOREST STEWARDSHIP COUNCIL - FSC**



SOCIAL IMPACT ASSESSMENT

COVERING

PLANTATION EMPLOYEES & NEIGHBOURING VILLAGERS

Lalan Rubbers Pvt Ltd

April 2010

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Introduction

Lalan Rubbers (Pvt) Ltd is one of the leading plantation companies in Sri Lanka. It owns about 7700 ha of plantations and manages into four groups namely Mahaoya, Sapumalkande Udabage and Pitiakande. The main crop planting is rubber and smaller proportion of coconut and tea are planted as well. Collectively about 3000 residence and non residence employees are working in four groups. All the groups are surrounded by villages. The assessment was carried out in four Groups and adjacent villages.

Objective of the survey

1. Finding out the social impacts of the plantation management on workers of the company
2. Finding out the social impact of the plantation on the villagers living nearby the plantations
3. Finding out the environmental impacts of the plantation Management

Methodology of the survey

Two questionnaires were developed separately for the workers of the company and for the villagers based on the possible impacts on the people working in the estates, villagers living nearby the estates and environment. These criteria are explained in Annex 1. Both questionnaires were printed in Sinhala.

The survey was done Group wise. At least 33 workers and 15 villagers were interviewed per Group. In most of the times questionnaire was explained by the person who distributed the questionnaire since majority of estate workers had a low literacy level. People were interviewed randomly within a Group covering previously decided number of workers. The number was decided by taking same proportion of workers from different worker category.

<u>Employment category</u>	<u>Number of people</u>
Rubber harvesting technicians	16
Sundry workers	16
Field officers	2

Villagers were interviewed randomly.

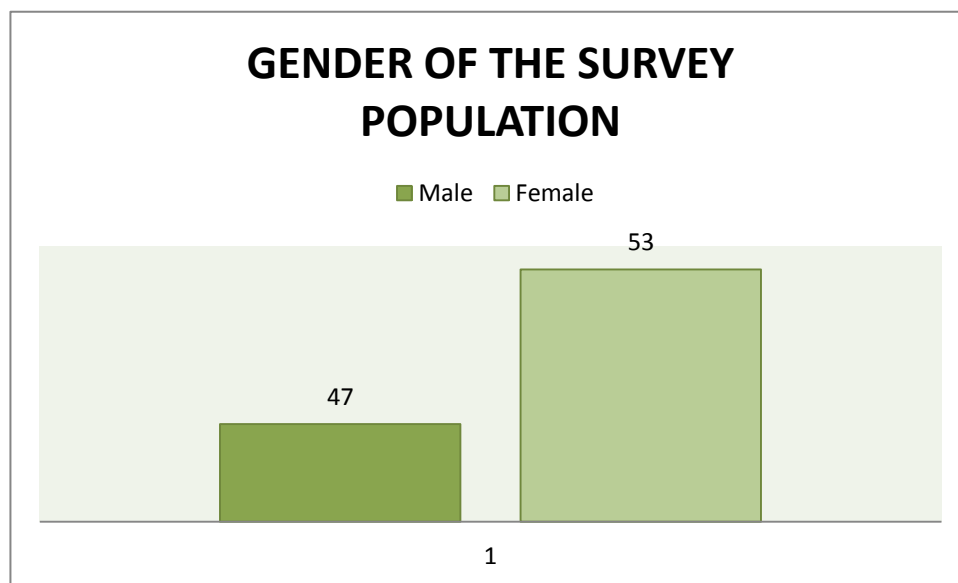
Analysis

Analysis was done using statistical software (MINITAB 14).

Evaluation of the results of Social Impact Assessment (Employees)

Sex

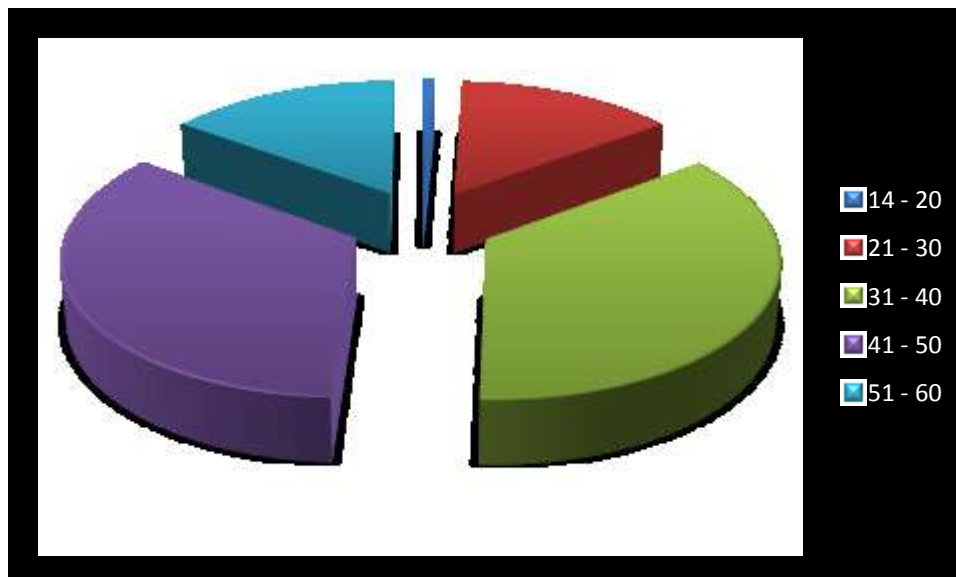
Sex	Male	Female
Count	62	72
%	46.27	53.23



The sample population represents the almost similar gender representation of the total employees of the company. (Actual = 54% females)

Age group

Age Groups	Results	Proportion %
14 - 20	1	0.75
21 - 30	19	14.17
31 - 40	48	35.82
41 - 50	46	34.33
51 - 60	20	14.93
Total participants	134	100%



The results indicate that people from different age groups have taken participation in the survey. The proportions of interviewed people from different age groups are proportionate to the number of all workers belongs to different age groups, which means the sample size represent actual age groups of the total population.

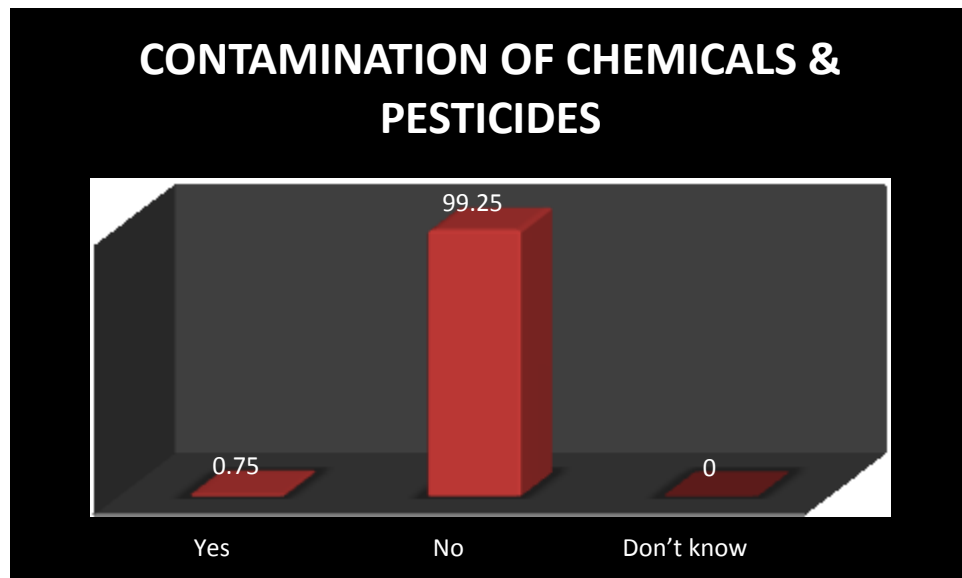
Question No 1,

Objective : To Find out whether there are contaminations of streams by chemicals, pesticides or weedicides used by the Estates.

Results

Answers	Results	Proportion %
Yes	1	0.75
No	133	99.25
Don't know	0	0

IS THERE ANY CHEMICAL OR WASTE CONTAMINATION INTO THE STREAMS DUE TO ACTIVITIES OF THE ESTATE?



Results for the answer 'Yes' is significantly lower than the answer 'No' Therefore, it is apparent that contamination of water streams by chemicals, pesticides or weedicides is negligible.

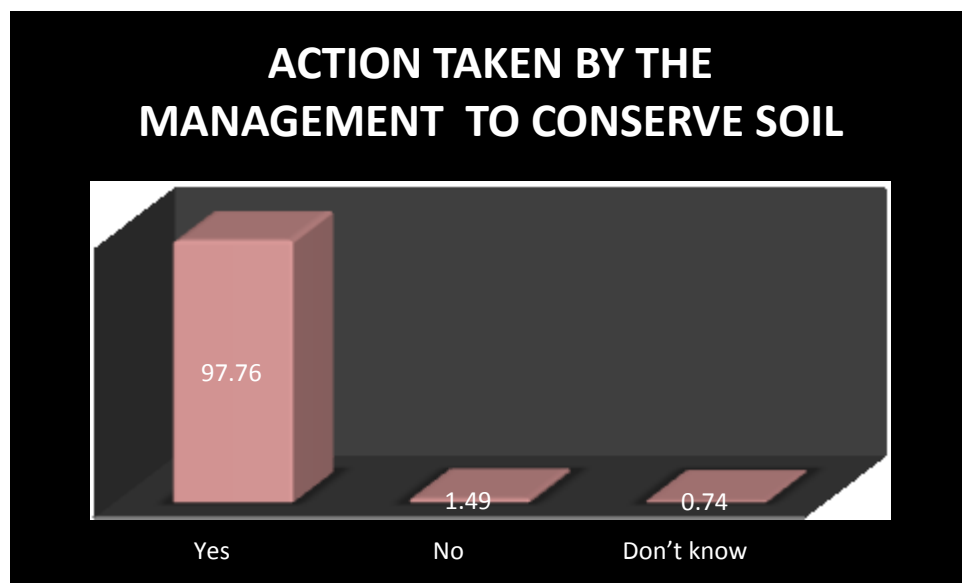
Question No 2,

Objective : To find out if the management of the estates has taken sufficient steps to minimize soil erosion.

Results

Answers	Results	Proportion %
Yes	131	97.76
No	2	1.49
Don't know	1	0.74
Total	134	100

HAS THE MANAGEMENT OF THE ESTATE TAKEN ADEQUATE MEASURES TO CONSERVE SOIL?



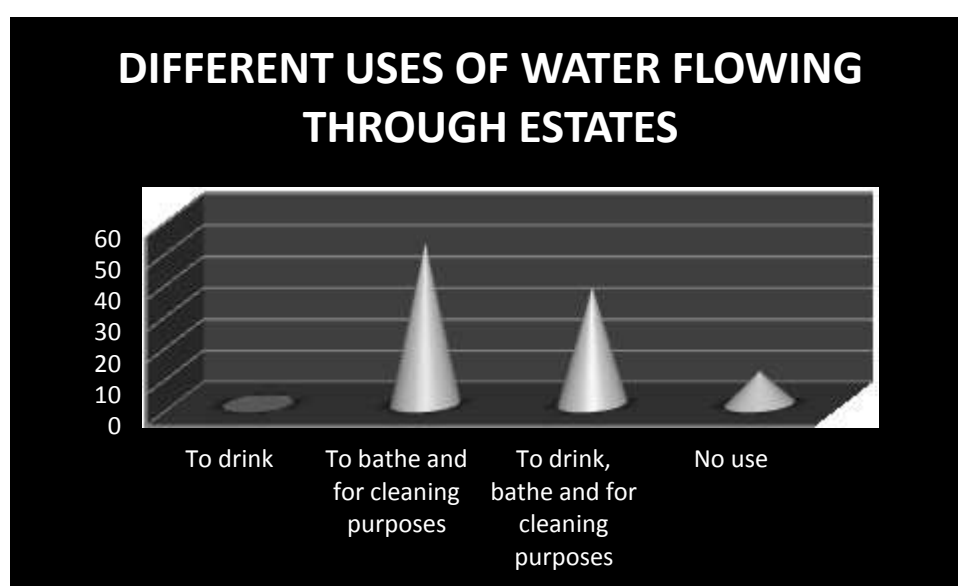
Results for the choice 'Yes' is significantly higher than the result for choice 'No' and 'don't know'. Therefore, we can conclude that comparatively very higher proportion of interviewed workers believe that the estates of their individual groups have taken enough steps to minimize soil erosion.

Question No 3,

Objective : To find out the severerity of main usages of water used by the employees from streams draining through the estates.

Answers	Results	Proportion %
To drink	0	0
To bathe and for cleaning purposes	69	51.49
To drink, bathe and for cleaning purposes	50	37.31
No use	14	10.45

THE DEGREE OF SEVERITY OF USAGES OF WATER FLOWING THROUGH THE ESTATE



Taking the results in to account it is apparent that most of the people working in the estates are using water from the streams mainly for bathing and cleaning purposes. This is mainly due to availability of drinking water through water schemes provided by the Management. However larger proportion of the people are using stream water for drinking purposes as well. This response lead us to beleive (by looking at the results of the question number 1,2, 4 and 6) that the water drained through the estates are not polluted and safe to drink.

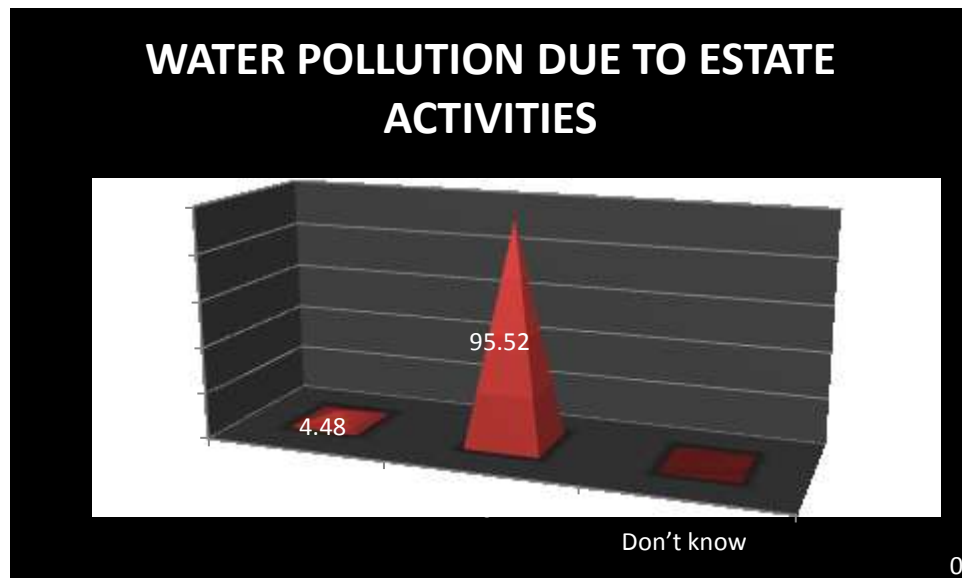
Question No 4,

Objective : To find out if the employees are aware if management of the estates has good waste management system.

Results

Answers	Results	Proportion %
Yes	6	4.48
No	128	95.52
Don't know	0	0

ARE THERE ANY WASTE BEEN DISCHARGED TO THE ESTATE LAND OR TO NEARBY RIVERS BY THE ESTATE OR THE ESTATE HOUSEHOLD?



According to the results it is very clear that estate ground and water streams are **rarely** polluted by the estate or majority of workers living in the estates. Since more than 95% of the interviewed workers have given the answer 'No'. The proportion is statistically significant as well.

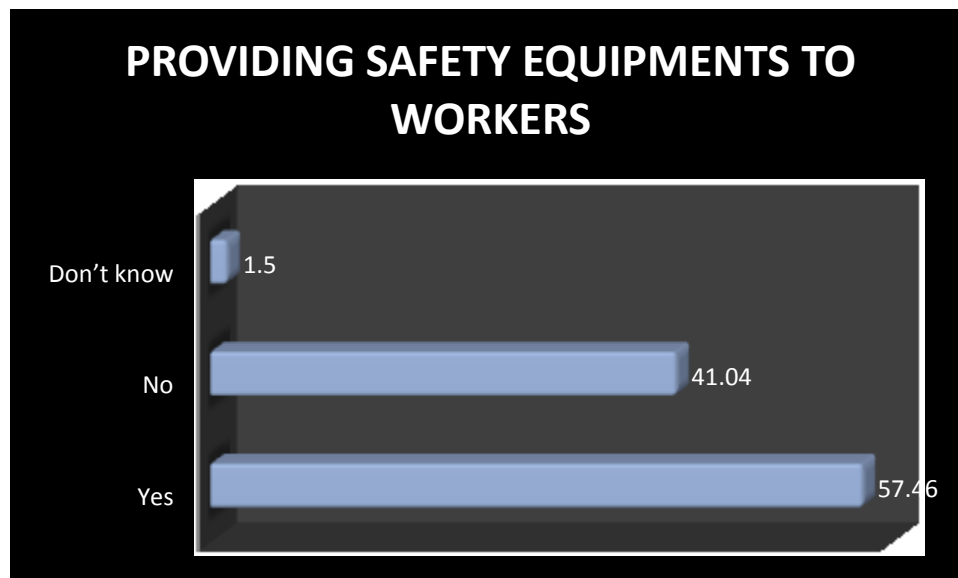
Question No 5,

Objective : To find out whether the workers are working under a safe environment.

Results

Answers	Results	Proportion %
Yes	77	57.46
No	55	41.04
Don't know	2	1.49

HAS THE ESTATE PROVIDED SAFETY EQUIPMENTS TO WORKERS FOR THEIR SAFETY?



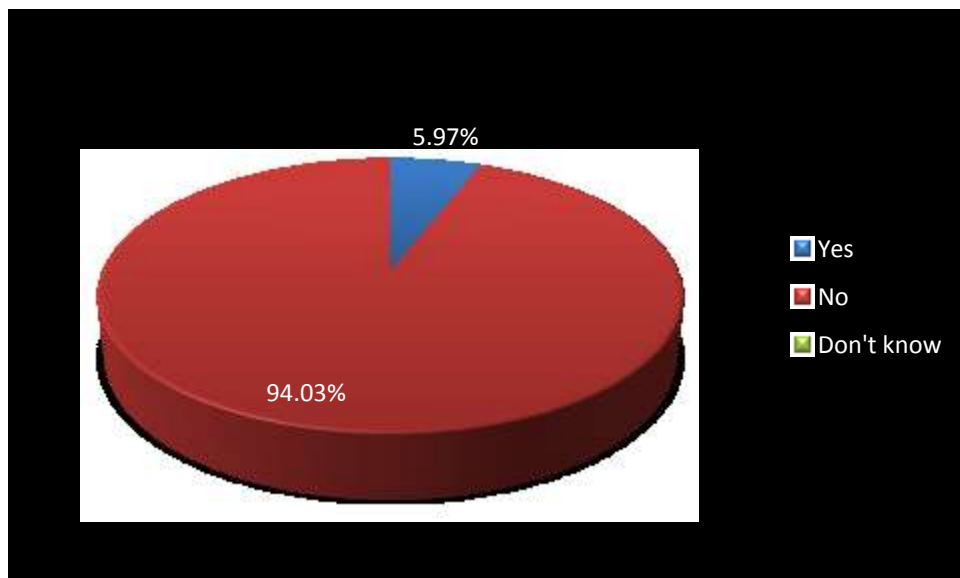
Here, about 40% of the people have given the answer 'No'. According to the results, a larger proportion of the workers are not provided with necessary safety equipments.

Question No 6,

Objective : To find out whether the water streams drain through the estates are polluted through cleaning of latex collecting containers, vehicles or machineries.

Answers	Results	Proportion %
Yes	8	5.97
No	126	94.03
Don't know	0	0

ARE THE LATEX BUCKETS, SPRAYING MACHINES, ESTATE VEHICLES & EQUIPMENTS BEEN WASHED INTO THE RIVERS ADJACENT TO THE ESTATE?



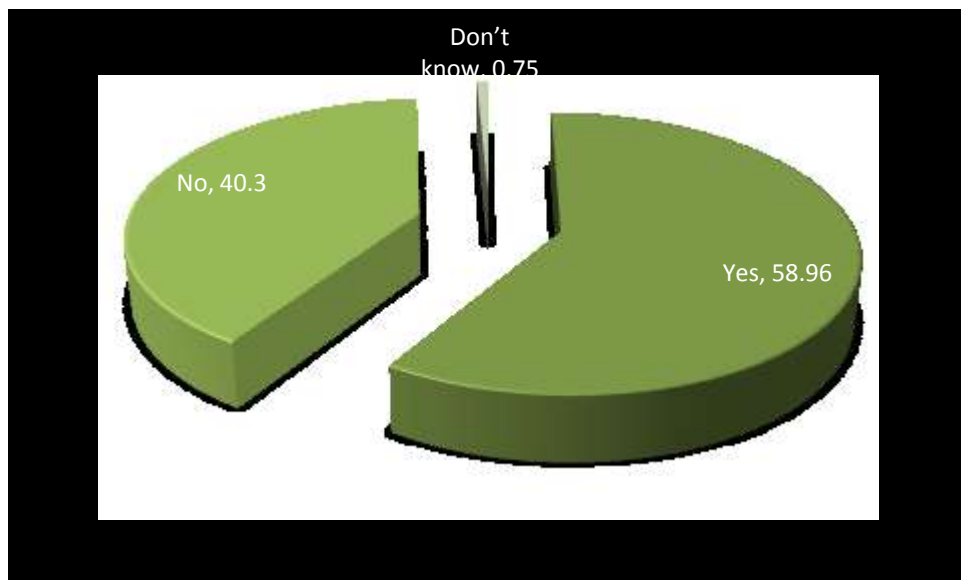
Since significant proportion of interviewed workers have given the answer 'No' it is clear the estate managements have almost completely avoided the chances of mixing latex, chemicals and oils with stream water which can possibly cause health impacts to the water consuming people. The statement can be proven statistically too.

Question No 7,

Objective : To find out whether estate managements have taken enough steps to avoid emission of Persistent Organic Pollutants (POPs) to the atmosphere through burning plastics and polythenes.

Answers	Results	Proportion %
Yes	79	58.96
No	54	40.30
Don't know	1	0.75

HAVE YOU SEEN PLASTICS & POLYTHENE BEEN BURNT INSIDE THE ESTATE?



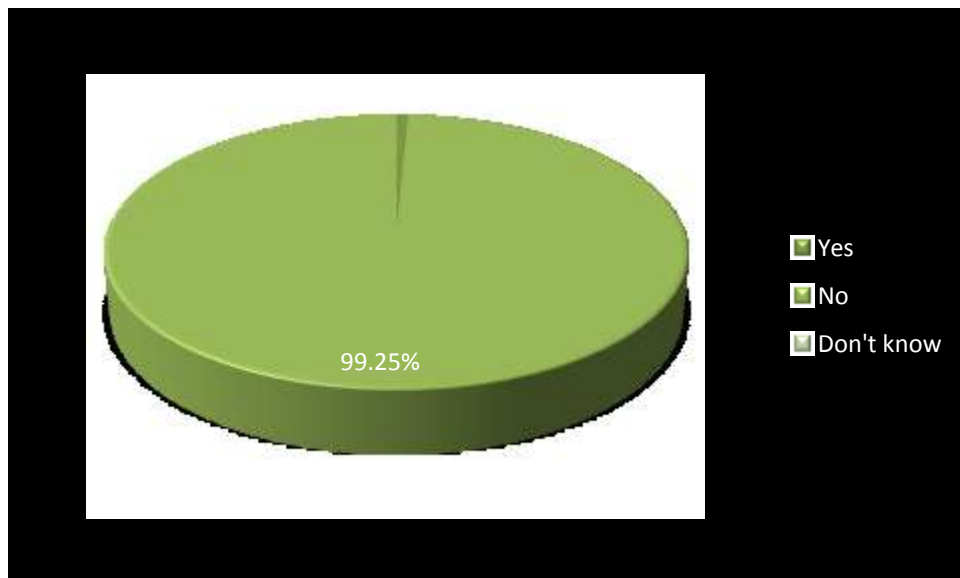
By looking at the results it can be clearly concluded that activities mentioned in the question are carrying out in the estates.

Question No 8,

Objective : To find out whether there is any activity is carried out in the estates which create noise pollution.

Answers	Results	Proportion %
Yes	1	0.75
No	133	99.25
Don't know	0	0

IS THERE ANY ACTIVITY TAKING PLACE INSIDE THE ESTATE THAT GENERATE HUGE NOISES

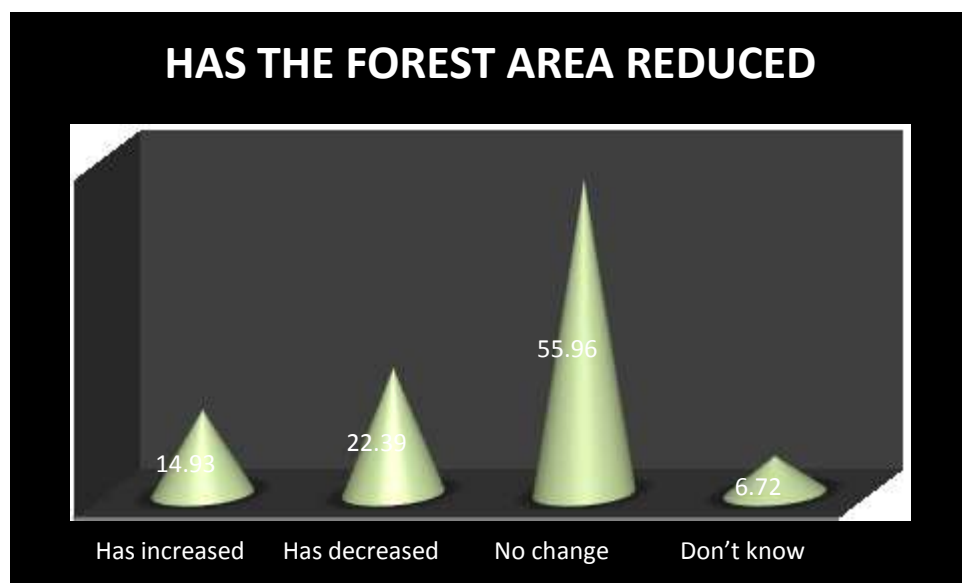


Almost 100% of the interviewed workers of the estates have answered as 'No'. The difference is statistically significant. Therefore, it can be concluded that there is no sound polluting activity occurring in the estates.

Question No 9,

Objective : To find out whether the extents of the estates' forests are reducing.

Answers	Results	Proportion %
Has increased	20	14.93
Has decreased	30	22.39
No change	75	55.97
Don't know	9	6.72



Though 22.39% of the interviewed people have said that the forests are decreasing, 14.39% of interviewed workers have said forests are increasing while 55.97% have said there is no difference. The area under rubber uprooted during past regimes haven't been planted during the past allowing such areas to get into shrub jungles. These lands are being cultivated now and this could be a reason for the 22.39% employees felt that the jungle area is decreasing.

Question No 10,

Objective : To find out whether hunting is carried out in the estates that ultimately reduce the population and the diversity of the wild animals within the area.

Answers	Results	Proportion %
Yes	6	4.48
No	122	91.04
Don't know	6	4.48

IS HUNTING BEING CARRIED OUT IN THE ESTATE?



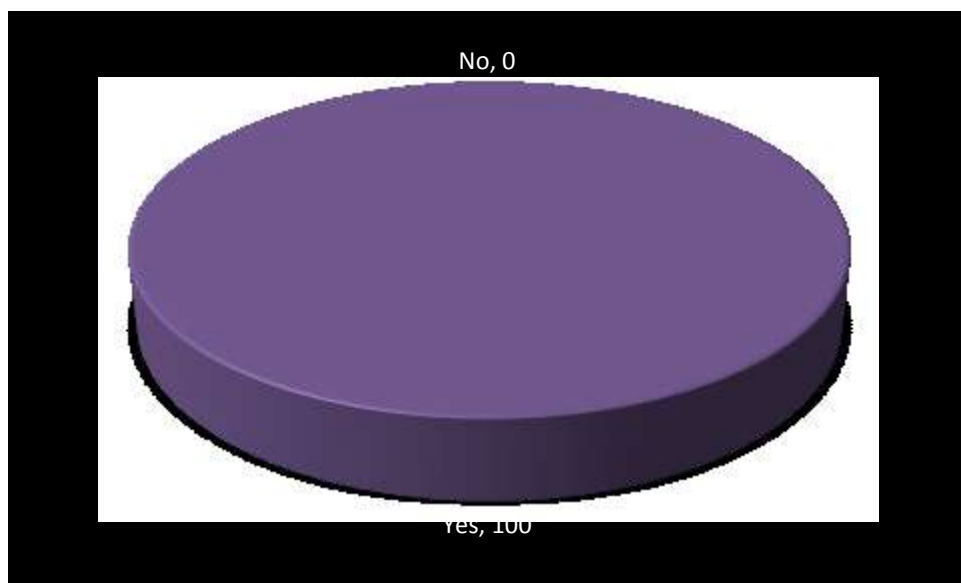
It is apparent that proportion of the answer 'No' is significantly higher than the answer 'Yes'. Therefore the impact on wild animal and also the impact on the diversity of the wild fauna are not significantly negative.

Question No 11,

Objective : To find out whether there are any omissions or mis-calculations in recording the working days of the workers, overtime or over kilos of latex.

Answers	Results	Proportion %
Yes	134	100
No	0	0

HAVE THE EMPLOYEES BEEN CORRECTLY PAID THEIR WAGES/SALARIES?



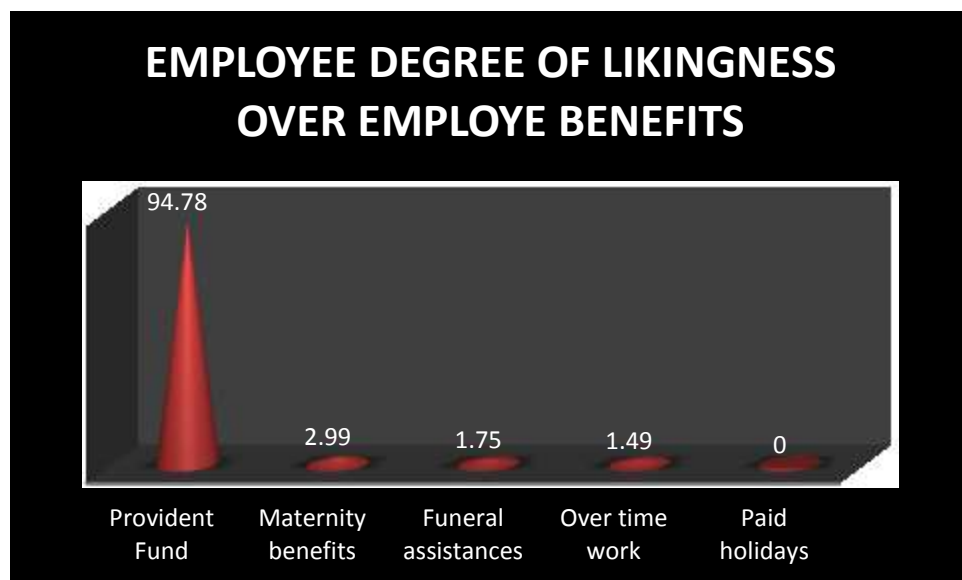
By looking at the results it is very clear that the company has won the confidence of the workforce that they have been paid correctly. This has become quite possible due to the investment in IT.

Question No 12,

Objective : To find out the preferences on different benefits given by the estate Management in addition to the salary.

Choice	Mostly liked	%	ii	%	iii	%	iv	%	Least liked	%
Provident Fund	127	94.78	0	0	0	0	3	2.24	4	2.99
Maternity benefits	4	2.99	22	16.42	7	5.22	13	9.70	88	65.67
Funeral assistances	1	1.75	41	30.60	20	14.93	39	29.10	33	24.63
Over time work	2	1.49	53	39.55	49	36.57	24	17.91	6	4.48
Paid holidays	0	0	18	13.43	58	43.28	55	41.04	3	2.24

THE PREFERENCES OF EMPLOYEES OVER SOME OF THE SELECTED BENEFITS OUT OF EMPLOYMENT AVAILABLE TO THEM



It is very clear estate are very happy with the provident fund given by the estate management since 94.78% of the interviewed workers have stated that EPF benefit as the most important benefit. The second most important benefit of the workers is maternity benefit. Other benefits are less important according to the results. However, interviewed workers had different choices on those benefits.

Question No 13,

Objective : To find out whether there are any changes of the agreed wages when those are paid.

Answers	Results	Proportion %
Yes	132	98.51
No	2	1.49
Sometimes	0	0

ARE YOU GETTING THE RECOMMENDED WAGES?



It is apparent that company is paying the agreed wages to the workers in almost all the occasions since the results for the choice 'Yes' is significantly higher than results of the choice 'No'.

Question No 14,

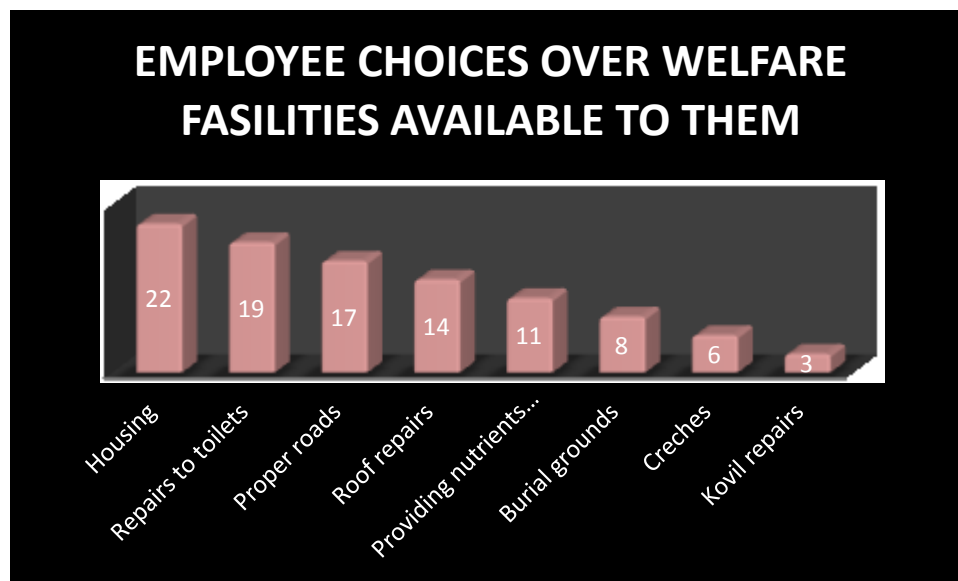
Objective : To find out preferences of the workers on some of the welfare activities done by the estate Management.

Choice	Crèches	%	Proper roads	%	Burial grounds	%	Kovil repairs	%
1	3	2.24	5	3.73	0	0	0	0
2	13	9.70	38	28.36	3	2.24	4	2.99
3	15	11.90	38	28.36	11	8.21	15	11.19
4	13	9.70	18	13.43	29	21.64	10	7.46
5	11	8.21	9	6.72	23	17.16	22	16.42
6	22	16.42	6	4.48	20	14.93	16	11.94
7	12	8.96	8	5.97	26	19.40	31	23.13
8	45	33.58	12	8.96	22	16.42	36	26.87

Choice	Housing	%	Roof repairs	%	Providing nutrient food for children	%	Repairs to toilets	%
1	123	91.79	1	0.75	1	0.75	1	0.75
2	4	2.99	24	17.91	1	0.75	45	33.58
3	1	0.75	14	10.45	12	8.96	28	20.90
4	4	2.99	24	17.91	17	12.69	19	14.18
5	2	1.49	28	20.90	18	13.43	22	16.42
6	0	0	29	21.64	31	23.13	11	8.21
7	0	0	9	6.72	43	32.09	5	3.73
8	0	0	5	3.73	11	8.21	3	2.24

According to the results of the survey it is apparent that people have expressed different preferences on different welfare activities. All the activities seem to be important to the workers. The worth of the welfare activities seem to be different depends on the workers.

As a whole, provision of houses has become comparatively the most important welfare given by the estates. Then, provision of toilets and maintenance of roads have become more important to the workers comparatively. However, that does not mean that other activities are not important as some of the workers have expressed other welfare activities as most important activities.

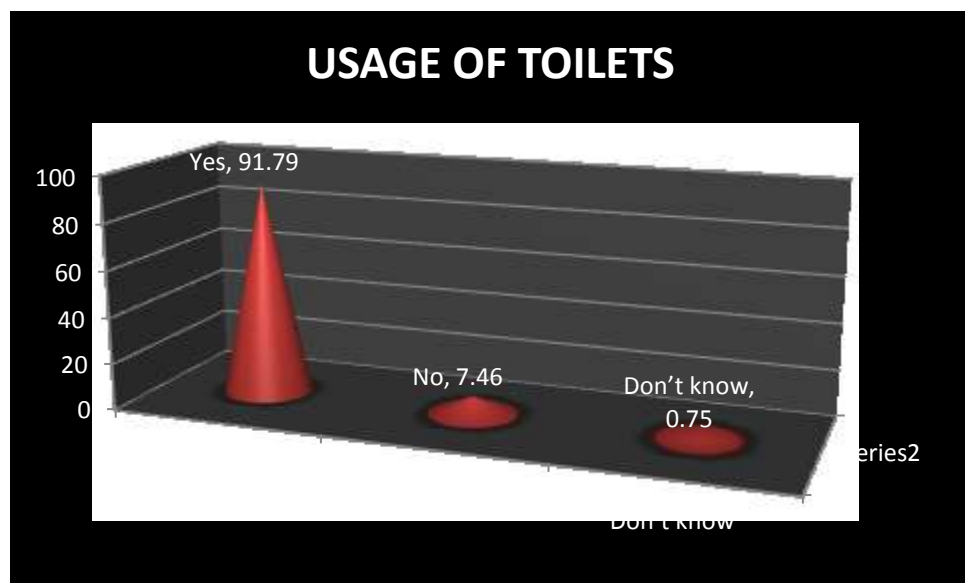


Magnitude of choices 1

Question No 15,

Objective : To find out whether workers living in the estates using toilets.

Answers	Results	Proportion %
Yes	123	91.79
No	10	7.46
Don't know	1	0.75

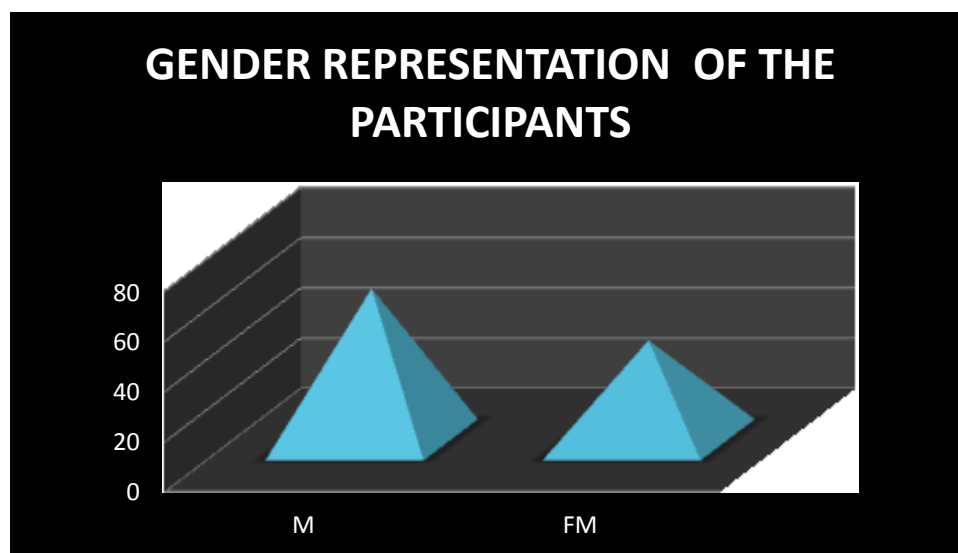


According to the results of the survey, almost all the workers who live in the estates are using toilets. However, in some of the areas all people are not using toilets. This may be due to two reasons which are less number of available toilets and some communities still have not adapted to use toilets. This is a social problem and also an environmental problem as these wastes could pollute ground water.

Evaluation of the results of Social Impact Assessment (Neighboring Villagers)

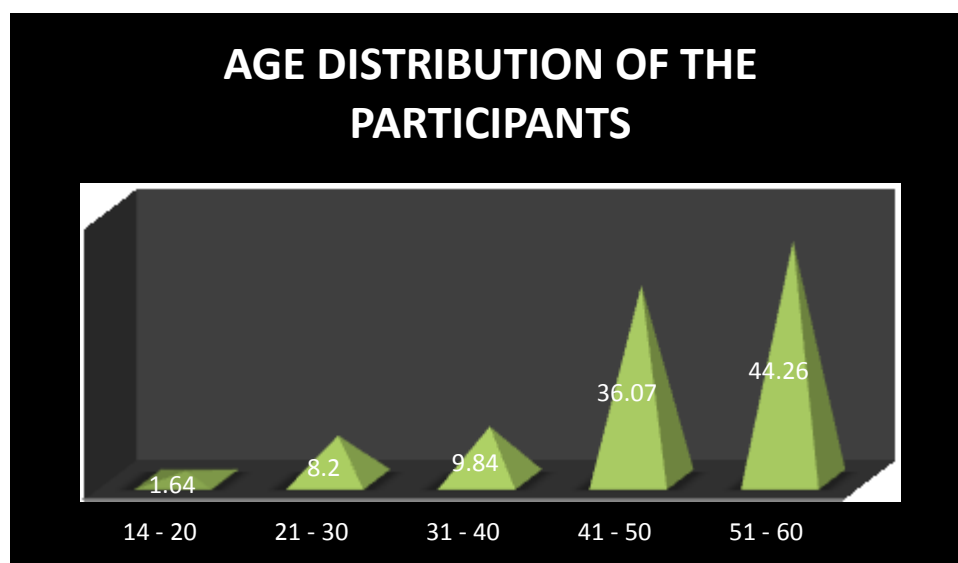
Sex

<i>Sex</i>	<i>Male</i>	<i>Female</i>
Count	35	23
%	60.34	39.66



Age group

<i>Age group</i>	<i>Results</i>	<i>Proportion %</i>
14 - 20	1	1.64
21 - 30	5	8.20
31 - 40	6	9.84
41 - 50	22	36.07
51 - 60	27	44.26

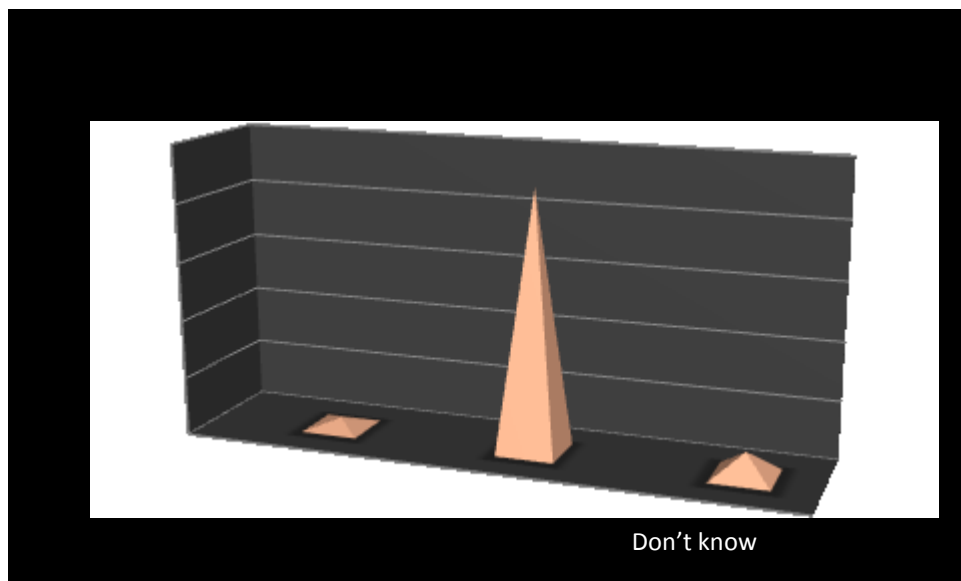


Question No 1,

Objective : Finding out whether there are contaminations of streams by chemicals, pesticides or weedicides applied in the Estates.

Results

<i>Answers</i>	<i>Results</i>	<i>Proportion %</i>
Yes	2	3.28
No	54	88.52
Don't know	5	8.20

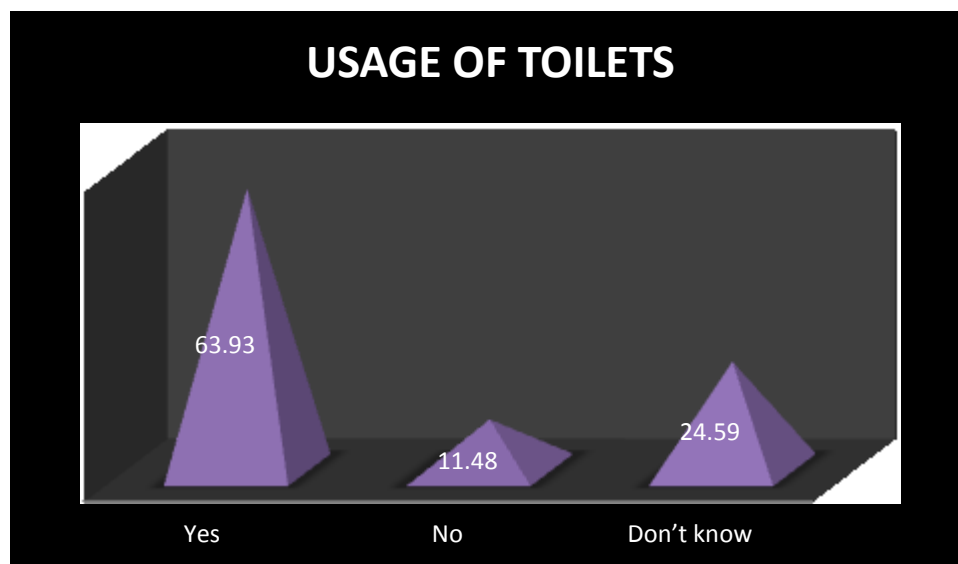


Results for the answer 'No' is significantly higher than the answer 'Yes'. Therefore, it is apparent that there is no contamination of water streams by chemicals, pesticides or weedicides.

Question No 2,

Objective : To find out whether workers living in the estates using toilets.

<i>Answers</i>	<i>Results</i>	<i>Proportion %</i>
Yes	39	63.93
No	7	11.48
Don't know	15	24.59

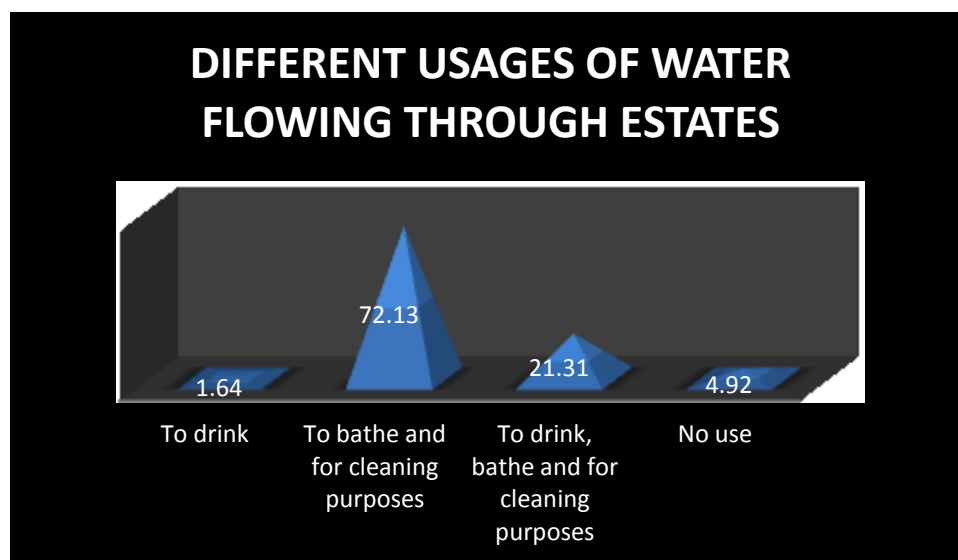


According to the results of the survey, almost all the workers who live in the estates are using toilets. However, in some of the areas some employees are not using toilets.

Question No 3,

Objective : To find out whether the water streams draining through the estates are used by the workers of the estates.

<i>Answers</i>	<i>Results</i>	<i>Proportion %</i>
To drink	1	1.64
To bathe and for cleaning purposes	44	72.13
To drink, bathe and for cleaning purposes	13	21.31
No use	3	4.92



Considering the outcomes it is apparent that most of the employees working in the estates are using water from the streams. A considerable proportion of the employees are using steam water for drinking purposes as well.

Question No 4,

Objective : To find out whether management of the estates has good waste management system.

Results

<i>Answers</i>	<i>Results</i>	<i>Proportion %</i>
Yes	50	81.97
No	11	18.03
Don't know	0	0

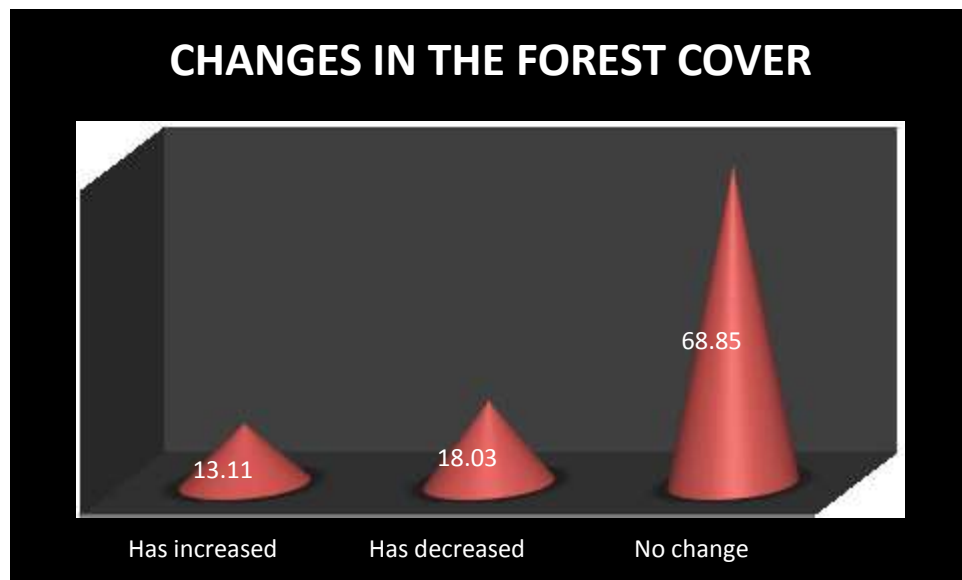


It is very clear that estate ground is not polluted by chemicals up to a level which may cause illnesses to the employees who consume this water for drinking purposes as more than 80% of the interviewed workers have given the answer 'Yes'. The proportion is statistically significant as well (Appendix 2).

Question No 5,

Objective : To find out whether the extents of the estates' forests are reducing.

<i>Answers</i>	<i>Results</i>	<i>Proportion %</i>
Has increased	8	13.11
Has decreased	11	18.03
No change	42	68.85



Though 18.03% of the interviewed employees have said that the forests are decreasing, 13.11% of interviewed workers have said forests are increasing while 68.85% have said there is no difference.

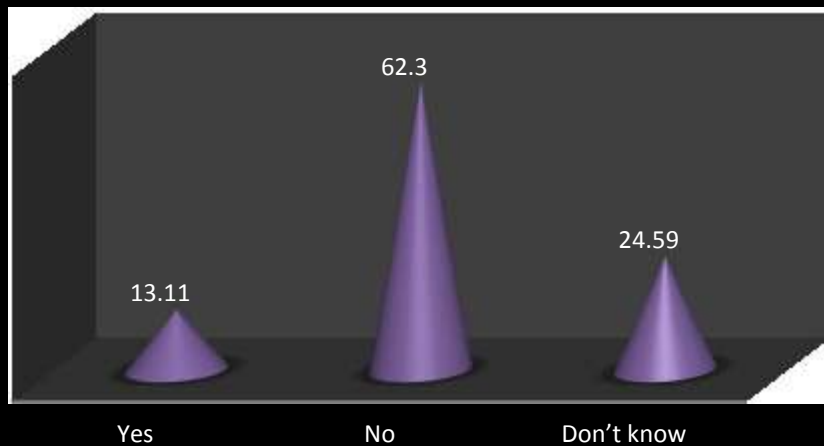
Question No 6,

Objective : To find out whether hunting is carried out in the estates that ultimately reduce the population and the diversity of the wild animals within the area.

<i>Answers</i>	<i>Results</i>	<i>Proportion %</i>
Yes	8	13.11
No	38	62.30
Don't know	15	24.59

It is apparent that proportion of the answer 'No' is significantly higher than the answer 'Yes'. Therefore the impact on wild animal and also the impact on the diversity of the wild fauna are not significantly negative.

HUNTING ON ESTATES ?



Question No 7 I,

Objective : To find out comparative willingness of the villagers on given welfare by the estate Management

** Here '5' is used when employees do not receive the specific welfare.

<i>Choice</i>	<i>count</i>	<i>Proportion %</i>
Most preferred	2	3.28
2	21	34.43
3	18	29.51
Least preferred	24	6.56
Not receiving	16	26.23

Question No 7 ii,

<i>Choice</i>	<i>count</i>	<i>Proportion %</i>
1	2	3.28
2	7	11.48
3	5	8.20
4	9	14.75
5	38	62.30

Question No 7 iii,

<i>Choice</i>	<i>count</i>	<i>Proportion %</i>
1	12	19.67
2	19	31.15
3	4	6.56
4	2	3.28
5	24	39.34

Question No 7 iv,

<i>Choice</i>	<i>count</i>	<i>Proportion %</i>
1	45	73.77
2	5	8.20
3	4	6.56
4	7	11.48
5	0	0

Almost every person benefits from at least one welfare activity done by the estate Management. As a whole, most of the villagers are very happy with the ability of using the estate roads for their transportation. Besides, more villagers are benefitted by the opportunity to use the estate common wells even though most of the employees have their own ways of supplying water.

Conclusion and recommendations

Employees who live on the plantation use water from streams or natural springs draining through the plantations, mainly for bathing & washing purposes. However, nearly 37% of them use such water for drinking in addition to washing & bathing as such, keeping water unpolluted in the streams flowing through plantations is very important. The results of the questionnaires show that water streams are rarely polluted with chemicals, latex, oil, grease, soil particles or waste. Villagers who live near by the plantations indicated that no person has got sick by consuming water from common wells or streams of the plantations. It indicates that the plantation management is carrying out their activities avoiding water pollution. This does not mean that a perfect situation is prevailing on plantations that prevents contamination of water or water pollution in the streams/wells & as such regular awareness programs to the employees through the medical staff of plantations are important to maintain the quality of safe drinking water

The outcome of the survey shows that nearly 41% of the participants believe that they do not have safety equipments. However, steps have been taken to provide safety to relevant employees already. Plantations are traditional in culture (150 years) and the employees also take some time to adjust to work with safety equipments on. Further there are no incidents of accidents whatsoever due to non availability of safety equipments in the current season.

The survey outcome indicates evidences of burning polythene on certain plantations. There has been a requirement to do so by the local health authorities to prevent mosquito related epidemics such as the spread of Dengue, which has created national level issues in the recent past. Most of the polythene burnt has been the shopping bags etc that is brought in by the resident workers to prevent from environment being polluted. Even if plantation Management had taken steps to stop similar activity, it seems to be happening without the knowledge of the plantation Management. Introducing proper collecting and disposing mechanism by the management is already in place. The policy related to waste management is already implemented. By having awareness programmes the workers and their families need to be educated in regard to the safe disposal of Polythene material with the assistance of the Management. Plantations are free from noise pollution and this has been an outcome of the survey. This situation should be maintained in the future.

Interviewed workers believe that the plantation Management has taken sufficient steps in minimizing soil erosion.

A reduction in the jungle cover has been reported by 22% whereas an increase and no change have been reported by 71%, the majority. The term "jungle cover" refers to shrub jungles as well that has self grown extents due to the delay in undertaking planting of rubber after uprooting in the past. These lands are being replanted at present and the permanent jungles are left untouched. The management has to create awareness amongst employees in this matter

Although a small number of 4.4% has stated that there is hunting on plantations, the vast majority of 91% believe that such hunting is non-existent. The plantation management must implement hunting policy so that even if there are isolated incidents such could be stopped.

The company has been paying employees' wages correctly & according to properly recorded data on the amount of work done.

The company also has been paying approved wages and other statutory payments to the workers without variations.

It appears that the employees' provident fund is their most preferred component derived from their wages and they also indicated that from welfare services provided by the management that housing is their best choice. In the area of proper usage of sanitary practices, almost 92% of the employees seem to be using toilets and the others are not accustomed to such facilities. An intervention is necessary to train such persons in the need for the proper use of sanitary facilities. The management has to investigate and make proper arrangements to meet up with this requirement thus negating possible effects of environmental pollution. Neighboring villagers are very happy with the ability of using estate roads for their transportation.

Annex 1

Question Number: 1

1	Count	Percent
1	1	0.75
2	133	99.25
N=	134	

Question Number: 2

2	Count	Percent
1	131	97.76
2	2	1.49
3	1	0.75
N=	134	

Question Number: 3

3	Count	Percent
1	1	0.75
2	69	51.49
3	50	37.31
4	14	10.45
N=	134	

Question Number: 4

4	Count	Percent
1	6	4.48
2	128	95.52
N=	134	

Test and CI for One Proportion: 4

Test of $p = 0.5$ vs $p \text{ not } = 0.5$

Event = 2

Variable	X	N	Sample p	95% CI	Exact P-Value
4	128	134	0.955224	(0.905090, 0.983393)	0.000

Question Number: 5

5	Count	Percent
1	77	57.46
2	55	41.04
3	2	1.49
N=	134	

Question Number: 6

6	Count	Percent
1	8	5.97
2	126	94.03
N=	134	

Test and CI for One Proportion: 6

Test of $p = 0.5$ vs $p \text{ not} = 0.5$

Event = 2

Variable	X	N	Sample p	95% CI	Exact P-Value
6	126	134	0.940299	(0.885753, 0.973876)	0.000

Question Number: 7

7	Count	Percent
1	79	58.96
2	54	40.30
3	1	0.75
N=	134	

Question Number: 8

8	Count	Percent
1	1	0.75
2	133	99.25
N=	134	

Test and CI for One Proportion: 8

Test of $p = 0.5$ vs $p \text{ not} = 0.5$

Event = 2

Variable	X	N	Sample p	95% CI	Exact P-Value
8	133	134	0.992537	(0.959123, 0.999811)	0.000

Question Number: 9

9	Count	Percent
1	20	14.93
2	30	22.39
3	75	55.97
4	9	6.72
N=	134	

Question Number: 10

10	Count	Percent
1	6	4.48
2	122	91.04
3	6	4.48
N=	134	

Question Number: 11

11	Count	Percent
1	134	100.00
N=	134	

Question Number: 12 i

12 i	Count	Percent
1	127	94.78
2	4	2.99
3	1	0.75
4	2	1.49
N=	134	

Question Number: 12 ii

12 ii	Count	Percent
2	22	16.42
3	41	30.60
4	53	39.55
5	18	13.43
N=	134	

Question Number: 12 iii

12 iii	Count	Percent
2	7	5.22
3	20	14.93
4	49	36.57
5	58	43.28
N=	134	

Question Number: 12 iv

12 iv	Count	Percent
1	3	2.24
2	13	9.70
3	39	29.10
4	24	17.91
5	55	41.04
N=	134	

Question Number: 12 v

12 v	Count	Percent
1	4	2.99
2	88	65.67
3	33	24.63
4	6	4.48
5	3	2.24
N=	134	

Question Number: 13

13	Count	Percent
1	132	98.51
3	2	1.49
N=	134	

Test and CI for One Proportion: 13

Test of $p = 0.5$ vs $p \text{ not } = 0.5$

Event = 3

Variable	X	N	Sample p	95% CI	Exact P-Value
13	2	134	0.014925	(0.001813, 0.052875)	0.000

Question Number: 14 i

14 i	Count	Percent
1	3	2.24
2	13	9.70
3	15	11.19
4	13	9.70
5	11	8.21
6	22	16.42
7	12	8.96
8	45	33.58
N=	134	

Question Number: 14 ii

14 ii	Count	Percent
1	5	3.73
2	38	28.36
3	38	28.36
4	18	13.43
5	9	6.72
6	6	4.48
7	8	5.97
8	12	8.96
N=	134	

Question Number: 14 iii

14 iii	Count	Percent
2	3	2.24
3	11	8.21
4	29	21.64
5	23	17.16
6	20	14.93
7	26	19.40
8	22	16.42
N=	134	

Question Number: 14 iv

14 iv	Count	Percent
2	4	2.99
3	15	11.19
4	10	7.46
5	22	16.42
6	16	11.94
7	31	23.13
8	36	26.87

Question Number: 14 v

14 v	Count	Percent
1	123	91.79
2	4	2.99
3	1	0.75
4	4	2.99
5	2	1.49
N=	134	

Question Number: 14 vi

14 vi	Count	Percent
1	1	0.75
2	24	17.91
3	14	10.45
4	24	17.91
5	28	20.90
6	29	21.64
7	9	6.72
8	5	3.73
N=	134	

Question Number: 14 vii

14 vii	Count	Percent
1	1	0.75
2	1	0.75
3	12	8.96
4	17	12.69
5	18	13.43
6	31	23.13
7	43	32.09
8	11	8.21
N=	134	

Question Number: 14 viii

14 viii	Count	Percent
1	1	0.75
2	45	33.58
3	28	20.90
4	19	14.18
5	22	16.42
6	11	8.21
7	5	3.73
8	3	2.24
N=	134	

Question Number: 15

15	Count	Percent
1	123	91.79
2	10	7.46
3	1	0.75
N=	134	

Annex 2

Gender

sex	Count	Percent
1	35	60.34
2	23	39.66
N=	58	

Age

age	Count	Percent
1	1	1.64
2	5	8.20
3	6	9.84
4	22	36.07
5	27	44.26
N=	61	

Question Number: 1

1	Count	Percent
1	2	3.28
2	54	88.52
3	5	8.20
N=	61	

Question Number: 2

2	Count	Percent
1	39	63.93
2	7	11.48
3	15	24.59
N=	61	

Question Number: 3

3	Count	Percent
1	1	1.64
2	44	72.13
3	13	21.31
4	3	4.92
N=	61	

Question Number: 4

4	Count	Percent
2	50	81.97
3	11	18.03
N=	61	

Question Number: 5

5	Count	Percent
1	8	13.11
2	11	18.03
3	42	68.85
N=	61	

Question Number: 6

6	Count	Percent
1	8	13.11
2	38	62.30
3	15	24.59
N=	61	

Question Number: 7 i

7 i	Count	Percent
1	2	3.28
2	21	34.43
3	18	29.51
4	4	6.56
5	16	26.23
N=	61	

Question Number: 7 ii

7 ii	Count	Percent
1	2	3.28
2	7	11.48
3	5	8.20
4	9	14.75
5	38	62.30
N=	61	

Question Number: 7 iii

7 iii	Count	Percent
1	12	19.67
2	19	31.15
3	4	6.56
4	2	3.28
5	24	39.34
N=	61	

Question Number: 7 iv

7 iv	Count	Percent
1	45	73.77
2	5	8.20
3	4	6.56
4	7	11.48
N=	61	

Annex 3
Environmental impact assessment
Negative impacts checklist

Criterion	Sub criterion	Mechanisms
Soil	Soil pollution and degradation	Soil erosion through draining water from rains and excavating activities
Water quality	Water pollution	Contamination by chemicals through spillages when chemicals and pesticides mixed and applied
		Washing bowzers and chemical containers in streams
		Contamination by soil particles through erosion caused by water
		Contamination by solid waste through waste disposal into streams
		Contamination by toilet wastes through improper sanitation practices and facilities
		Improper fertilizing methods
Air quality	Sound pollution	Noisy factories
	Air pollution	Particulate matter emission exceeding standards through vehicle smokes,
		Toxic gasses emission through burning of polythenes and plastics
Species diversity	Diversity reduction	Deforestation, forest degradation
Wild life	Populations and diversity reduction	Deforestation, forest degradation and hunting
Protected areas	reduction in size	Clearing natural forests
Working shift	Increased working shift	Workers are forced to work more than the working shift
Working environment	Unsuitable working environment (less of safety equipments)	Increased health and safety problems of workers
Local economy	Decreasing	Insufficient wage rates, less involvement of the people who live in near communities
Education of the children in near communities	Decreasing	Child labor engagement in the works, dropping down the local economy
Welfare of the communities	Less welfare activities	Less contribution of the company on communities' welfare

Positive impacts checklist

Criterion	Sub criterion	Mechanisms
Soil	Soil conservation	Necessary trenches and erosion reduction mechanisms
		Proper chemical handling mechanisms
Water quality	Avoiding water pollution	Proper chemical handling mechanisms
		Properly arranged places for washing purposes avoiding contamination water bodies
		Soil erosion controlling mechanisms
		Proper solid waste collecting and disposal mechanism
		Adequate sanitation facilities
Air quality	Avoiding air pollution	Noise reduction mechanisms and low noise machines
		Properly maintaining vehicles under necessary emission standards
		Proper polythene and plastic collecting and disposal mechanism
Species diversity	Conservation of bio diversity	Forest conservation activities,
Wild life	Conservation wild life	Forest conservation and wildlife protecting activities, prohibited hunting
Protected areas	Protection	Road construction avoiding fragmentation in the protected areas
Local economy	Increasing	Better wage rates for employees, providing jobs for women
Education of the children in near communities	Uplifting	Education encouraging activities such as providing necessary thing for the school children
Welfare of the communities	Welfare activities and money allocation on them	More contribution of the company on community living in the estate as well as near villages