

CHAPTER - II

RESEARCH METHODOLOGY

2.1 INTRODUCTION

Major Robert Bruce, an army officer posted in Assam, discovered tea plants growing in wild in Assam in 1834. On the basis of his report, Lord William Bentinck, the then Governor General of India, set up a committee in 1834 to find out the possibility of tea cultivation in India.

Tea cultivation was experimentally started in Darjeeling in 1840 when Dr. Campbell, a civil surgeon, planted tea seeds in his garden at Beechwood, Darjeeling, 7000 ft above sea level. Tea cultivation started in Terai in 1862 and in Dooars twelve years later. (O'Malley 1907)

Tea, being labour intensive in nature, required plenty of labourers to plant, pluck and finally manufacture the produce. For tea gardens of Darjeeling, people were brought from Nepal and made them settle in tea gardens. Majority of the labour force in Terai and Dooars are people from the tribal belt of Central India, namely, Chotanagpur and Santhal Pargana regions and the adjoining tribal areas in Madhya Pradesh and Orissa.

According to District Gazetteer prepared by Mr. Grunnings in 1911, the first tea garden in Jalpaiguri was started by one Dr. J. P. Brougham in the year 1874. The Western Dooars was the principal tea growing areas of the district of Jalpaiguri.

The places where tea is grown in the Indian Union are:

North East India: i) Assam Valley and Suma Valley (Cachar) in the state of Assam. ii) the Dooars area in Jalpaiguri district, the Terai area in the plains of Darjeeling district and the Siliguri and Kurseong sub-divisions and hilly areas of Darjeeling district in the state of West Bengal, usually known as Dooars, Terai and Darjeeling. iii) Tripura

North India: i) Himachal Pradesh (Kangra valley and Mandi) ii) Uttaranchal (Deharadun, Almora and Garhwal) and iii) Jharkhand (Rachi).

South India: Tea plantations are mostly found on the Western Ghats and their associated ranges extending over the existing state of Kerela, Chennai and Mysore. The important tea growing districts are Nilgiris,

Coimbatore, Madurai, Tirunelveli and Kanyakumari in Chennai. Kottayam, Kozhikoda, Quilon, Kannanore, Trivandrum and Palghat in Kerala and Chickmagalur, Hassan and Coorg in Mysore.

Darjeeling district lies between 26° 31' and 27° 13' north latitude, and between 87° 59' and 88° 53' east longitude. The administrative head-quarter of the district is Darjeeling, situated in the lower Himalayas in 27° 3' north latitude and 88° 16' east longitude.

The word 'Dooars' was originated from the Hindi word 'dwar' meaning gateway. Dooars is the gateway to Bhutan. It is a flat strip of land about 22 miles broad and nearly 200 miles long, bounded by Bhutan and Darjeeling district in the north and Coochbehar district and Baikunthpur forest in the south. Only this area i.e. the previous western Dooars is now called Dooars. (Sunder 1894) This region constitutes one of the major tea areas in the North-east India. The tea was first planted in Gajaldoba garden in 1874 followed by Phulbari (Lees River) and Bagracote. (A.K. Mitra Census of India 1951)

The Terai region lies in the plains of Darjeeling district. The Terai portion of the Darjeeling district is a low-lying belt of country, traversed by numerous rivers and streams rushing down from the hills and by the upland ridges which marked their course. In 1882, the first garden in Terai was opened at Champta, near Khaprail by Mr. James White who had previously stated the Singell Estate near Kurseong. (O'Malley 1907)

The annual average prices of tea in the different auction centers of the world have registered an increase during 2002 over 2001 with the exception of India and Mombassa. The annual average prices of tea at Indian auction during 2002 registered a decline of Rs. 5.17 per kg i.e. 9.26% compared to 2001. At North Indian auction the annual average prices was Rs. 69.80 per kg in 2001 and Rs. 62.66 per kg in 2002 hence a decline of Rs. 7.14 per kg i.e. 10.24%.

Table 2.1

WORLD PRODUCTION OF TEA

(figures in thousand kgs)

COUNTRY	1999	2000	2001	2002
INDIA	825935	846922	853923	826165
CHINA	675871	683324	701699	715000
SRILANKA	284149	306794	296301	310032
KENYA	248818	236286	294631	287044
TURKEY	170563	130671	142900	145000
INDONESIA	161003	157371	161202	166027
VIETNAM	65000	70000	80000	84000
ARGENTINA	55000	63000	59000	62000
BANGLADESH	46365	52639	57341	52863
MALAWI	38469	42114	36770	39185
TANZANIA	23490	23897	24745	27511
OTHERS	378312	378809	382667	384462
TOTAL	2972975	2991827	3091179	3099289

Source: Tea Statistics 2000-01, Tea Board, Kolkata, p 190, 2003.

The world production of tea during 2002 has registered an increase of 8 M. kg i.e. .26% over 2001. Except for India and couple of other countries like Kenya and Bangladesh, all other tea producing countries have seen the growth in the tea production in 2002. During 2002, the production of tea in India registered a decline of 27.76 M. Kg. (3.25%) over 2001.

Table 2.2

EXPORT OF TEA FROM INDIA

Year	Quantity (M. kgs.)	Value (Rs. Crores)	Unit price (Rs./ kg)	Financial Year	Quantity (M. kgs.)	Value (Rs. Crores)	Unit price (Rs./ kg)
1999	191.72	1965.87	102.54	1999-00	192.44	1932.66	100.43
2000	206.82	1898.61	91.80	2000-01	203.55	1889.79	92.84
2001	182.58	1682.11	92.13	2001-02	190.00	1695.79	89.25
2002	201.00	1753.39	87.23	2002-03	184.40	1665.04	90.29

Source : Ibid. , p xiv.

During calendar year 2002, India registered an increase in the export by 19 M. Kg over 2001. However, the export growth could not earn desired foreign exchange as the export price had declined by Rs.4.90 per kg in 2002 over 2001. If we look at the direction of exports of Indian tea in 2002, we notice a visible decline in our export to CIS countries. The export to non-CIS countries has registered an improvement in 2002. India export tea to CIS countries like Russia, Kazakhstan, Ukraine and Uzbekistan and to Non-CIS countries like United Kingdom, Germany, U.S.A, Canada, UAE, Iraq, Saudi Arabia, Turkey, Pakistan, Japan, Afghanistan, Sri Lanka, Australia etc.

TABLE 2.3
AREA UNDER TEA IN DIFFERENT COUNTRIES

(area in hectares)

COUNTRY	1999	2000	2001	2002
CHINA	1130000	1089000	1140700	1155000
INDIA	490200	504366	509770	511940
SRILANKA	195460	188971	188971	188971
INDONESIA	156840	157488	160991	162000
KENYA	120429	122236	131581	132000
VIETNAM	77142	80000	82000	84000
TURKEY	76749	76749	76653	76700
BANGLADESH	48611	49195	49313	49500
ARGENTINA	39000	39000	36000	36000
TANZANIA	21479	21212	21371	21400
MALAWI	18807	18782	18761	18780
OTHERS	317427	318387	318750	319668
TOTAL	2692144	2665386	2734861	2755959

Source: Ibid., P 189.

Area under tea in India has been registering a continuous increasing due to increase in the number of small tea growers. 19% of the total area under tea in the world is in India. China has more than double the areas under tea than India.

TABLE 2.4
STATE WISE AREA AND PRODUCTION OF TEA IN INDIA

(Area in hectares and production in thousand kgs)

DISTRICT/ STATE	1999		2000		2001	
	Area	Prod.	Area	Prod.	Area	Prod.
ASSAM	258455	437324	266512	449219	268983	453936
WEST BENGAL	107430	175975	107479	181536	108802	186876
TAMILNADU	69103	130462	74398	131812	75625	132401
KARALA	36845	66833	36940	68947	36940	65151
TRIPURA	6482	6385	6623	6431	6700	6506
HIMACHAL	2325	1222	2325	1247	2325	1022
KARNATAKA	2122	5381	2122	5407	2128	5564
ARUNACHAL	2179	1063	2176	993	2250	1047
U.P	1068	309	1068	264	1068	327
BIHAR	1348	473	1350	538	1445	543
MANIPUR	746	97	907	96	950	101
NAGALAND	1012	39	1214	43	1270	45
MIZORAM	360	35	391	39	400	41
ORISSA	214	100	214	105	214	105
SIKKIM	296	102	296	105	300	110
MEGHALAYA	215	135	351	140	370	148
TOTAL	490200	825935	504366	846922	509770	853923

Source: Ibid., p 11.

During the year 2001, West Bengal accounted for 22% of the total tea produced in India making it the second highest tea producing state in India next only to Assam. Assam holds the number one position by producing more than 50% of the total tea produced in India.

TABLE 2.5
AREA UNDER DIFFERENT AGE GROUP OF TEA BUSHES AS ON
31.12.2000

(area in hectares)

REGION	Below 5 years	5 to 10 years	11 to 20 years	21 to 30 years	31 to 40 years	41 to 50 years	Over 50 years	Total
DARJEELING	735	1350	670	820	1112	1035	8862	14584
DOOARS	5350	6250	6383	5840	8398	4725	26517	63463
TERAI	2665	1135	1192	969	790	1200	2955	10906
TOTAL	8750	8735	8245	7629	10300	6960	38334	88953

Source: Ibid., p 28.

Of 14584 hectares of land occupy by tea bushes in Darjeeling, about 61% of the area is covered by teas bushes which are over 50 years old. In Dooars 41% of the tea growing areas have over 50 years old tea bushes. The figure is only 27.1% for Terai. Productivity, especially in Darjeeling is on the decline due to old tea bushes.

TABLE 2.6
PRODUCTION OF TEA IN DARJEELING, DOOARS AND TERAI
(figures in thousand kgs)

REGION	1998	1999	2000	2001
DARJEELING	10253	8653	9281	9742
DOOARS	147133	124801	128964	130739
TERAI	36403	42521	43291	46395
TOTAL	195787	177974	183536	188877

Source : Ibid. , p 11.

TABLE 2.7
AREA UNDER TEA IN DARJEELING, DOOARS AND TERAI
(area in hectares)

REGION	1998	1999	2000	2001
DARJEELING	17830	17604	17228	17318
DOOARS	70479	69708	69703	70017
TERAI	17315	20118	20548	21467
TOTAL	105624	107430	107479	108802

Dooars includes Cooach Behar

Terai includes West Dinajpur

Source : Ibid. , P 5.

Table 2.8
**ESTIMATED AVERAGE DIALY NUMBERS OF LABOURERS
EMPLOYED**

REGION	1997	1998	1999	2000
DARJEELING	49783	50289	50964	51515
DOOARS	159378	161176	161784	163524
TERAI	34607	36119	38264	38420
TOTAL	245765	249582	253011	255459

Source: Ibid. , p 158.

During the year 2000, more than two lakh fifty thousand Daily Rated Workers (DRW) were employed by Darjeeling, Dooars and Terai regions taken together. Darjeeling employed 21%; Dooars employed 64% and Terai 15% of the total DRW. With the increase in the area under tea, the number of DRW has been on the rise continuously.

Table 2.9

INTERNAL CONSUMPTION OF TEA IN INDIA

YEAR	INTERNAL CONSUMPTION (in million kgs)
1999	633
2000	653
2001	673
2002	693

Source: Ibid. . p 135.

During the year 2002, the internal consumption of tea in India has registered an increase of 20 M kg over 2001. The table indicates that the internal consumption has been continuously rising.

2.2 VARIABLES STUDIED

The following variables have been examined while analyzing the data to fulfill the objective of the present study.

- Different regions: Darjeeling, Dooars and Terai
- Types of Gardens: Proprietary, Agency and Government Undertakings.
- Size of the gardens (in terms of area): small and big.
- Demographic variables: Age, sex, experience, status, education.
- Levels of employees: workers, trade union office bearers and managers
- Types of workers: garden workers, factory workers.

2.3 SAMPLING

SAMPLE SIZE

Darjeeling, Dooars and Terai have altogether 294 major tea gardens. Dooars has 162 major tea gardens followed by Darjeeling with 84 major tea gardens and Terai with 49 gardens. 50 tea gardens have been selected as sample garden from out of these 294 gardens giving proportionate representation to all the three regions. The method applied to calculate proportionate representation is shown in table 2.11. Out of 50 sample tea gardens, 28 gardens have been chosen from Dooars, 14 gardens from Darjeeling and remaining 8 gardens from Terai. After having decided that number of sample gardens, the next task was to select the names of the gardens. To select 14 gardens from Darjeeling, name of all the 84 tea gardens were arranged alphabetically and every sixth garden was picked up as a sample garden. The similar procedure was followed for gardens of Dooars and Terai region.

Table 2.10

TOTAL TEA GARDENS IN DARJEELING , DOOARS AND TERAI AREAS

REGION	NO OF TEA GARDENS
DARJEELING	83
DOOARS	162
TERAI	49
TOTAL	294

Table 2.11

CALCULATION OF 50 SAMPLE GARDEN APPLYING METHOD OF PROPORTIONATE REPRESENTATION

REGION	NO. OF GARDENS	PROPORTIONAL REPRESENTATION
DARJEELING	83	$(83 \div 294) \times 50 = 14$
DOOARS	162	$(162 \div 294) \times 50 = 28$
TERAI	49	$(49 \div 294) \times 50 = 8$
TOTAL	294	50

Table 2.12
NUMBER OF SAMPLE GARDENS

REGION	NO OF SAMPLE GARDENS	NO OF TOTAL GARDENS	% OF TOTAL GARDENS
DARJEELING	14	83	4.76
DOOARS	28	162	9.52
TERAI	8	49	2.72
TOTAL	50	294	17.00

17% of the total gardens of Darjeeling, Dooars and Terai region had been chosen as sample gardens for the research work. In terms of number, 50 gardens had been selected from out of 294 major tea gardens.

Table 2.13
SAMPLE DISTRIBUTION OF WORKERS ACCORDING TO SEX

REGION	MALE	FEMALE	TOTAL
DARJEELING	91(19%)	41(0.08%)	132(27%)
DOOARS	213(44%)	64(13%)	277(57%)
TERAI	59(12%)	18(0.04%)	77(16%)
TOTAL	363(75%)	123(25%)	486(100%)

Out of 486 workers who have participated in the study and filled up the questionnaires, 75% of them were male and 25% female.

Table 2.14
SAMPLE DISTRIBUTION OF WORKERS ACCORDING TO DAILY RATED WORKERS AND OTHER MONTHLY RATED EMPLOYEES

REGION	DRW	OMRE	TOTAL
DARJEELING	91(19%)	41(8%)	132(27%)
DOOARS	196(40%)	81(17%)	277(57%)
TERAI	53(11%)	24(5%)	77(16%)
TOTAL	340 (70%)	146 (30%)	486 (100%)

DRW= daily rated workers

OMRE= other monthly rated employees

DRW constituted 70% and OMRE constituted 30% of total 486 workers incorporated in the sample.

Table 2.15

**SAMPLE DISTRIBUTION OF WORKERS ACCORDING TO FACTORY
AND GARDEN WORKERS**

REGION	FACTORY	GARDEN	TOTAL
DARJEELING	38(8%)	94(19%)	132(27%)
DOOARS	85(17%)	192(40%)	277(57%)
TERAI	22(5%)	55(11%)	77(16%)
TOTAL	150(30%)	336(70%)	486(100%)

In tea industry, the tea production is carried on in two stages. Firstly, tea is plucked from the tea gardens as green leaves and brought them to the factory. The workers who are responsible to pluck green leaves from the field and bring them to the factory are called garden workers. About 70 to 80 % of all workers in the tea industry are garden workers. Once these green tea leaves are brought to the factory, it is the responsibility of the factory workers also known as tea makers to turn these green tea leaves into finished product by passing them through different stages. In my study, out of 486 sample workers, 31% were factory workers and the rest were garden workers.

Table 2.16

**SAMPLE DISTRIBUTION OF WORKERS ACCORDING TO SIZE OF
THE GARDEN**

REGION	SMALL GARDEN	BIG GARDEN	TOTAL
DARJEELING	63(13%)	69(14%)	132(27%)
DOOARS	70(14%)	207(43%)	277(57%)
TERAI	40(8%)	37(9%)	77(16%)
TOTAL	173 (35%)	313 (65%)	486 (100%)

For Darjeeling, small garden = 200 hectare or less; big garden = above 200 hectares.

For Dooars, small garden = 400 hectares or less; big garden = above 400 hectares.

For Terai, small garden = 250 hectares or less; big garden = above 250 hectares.

When the sample workers were distributed as per the size of the garden, 35% of them were representing small gardens and 65% representing big garden. Due to large variation in the size of the gardens especially in hill gardens and the plain gardens different criteria have been set up while determining size of the gardens.

Table 2.17

SAMPLE DISTRIBUTION OF WORKERS ACCORDING TO AGE

REGION	18 -30 years	31 – 40 Years	41 -50 years	Above 50 years	TOTAL
DARJEELING	31(6%)	48(10%)	41(8%)	12(2%)	132(27%)
DOOARS	49(10%)	82(17%)	104(21%)	42(9%)	277(57%)
TERAI	16(3%)	30(0.06%)	27(6%)	4(1%)	77(16%)
TOTAL	96(20%)	160(33%)	172(35%)	58(12%)	486(100%)

Out of 486 sample workers, 20% of the workers were 30 years and below, 33% were between 31 years and 40 years, 35% were between 41 years and 50 years and 12% were above 50 years. Workers of all ages are adequately represented in the sample.

Table 2.18

SAMPLE DISTRIBUTION OF WORKERS ACCORDING TO EXPERIENCE

REGION	1 – 10 years	11 – 20 years	21 -30 years	Above 30 years	TOTAL
DARJEELING	41(8%)	46(9%)	31(6%)	14(3%)	132((27%)
DOOARS	54(11%)	92(19%)	86(18%)	45(9%)	277(57%)
TERAI	17(4%)	30(6%)	22(5%)	8(2%)	77(16%)
TOTAL	112(23%)	168(34%)	139(29%)	67(14%)	486(100%)

The 486 sample workers were analyzed according to their experiences. Out of 486 workers 23% had experience below 10 years, 35% of them had experience between 11 years and 20 years. 29% had experience between 21 years and 30 years and 14% had experience above 30 years.

Table 2.19

SAMPLE DISTRIBUTION OF WOREKRS ON THE BASIS OF TYPES OF ORGANISATION

REGION	PROPRIETORY	AGENCY	GOVT UNDERTAKING	TOTAL
DARJEELING	109(22%)	13(3%)	10(2%)	132(27%)
DOOARS	198(41%)	59(12%)	20(4%)	277(57%)
TERAI	77(16%)	Nil	Nil	77(16%)
TOTAL	384(79%)	72(15%)	30(6%)	486(100%)

Out of 486 workers, 79% were from proprietary gardens, 15% from agency gardens and rest 6% from government undertaking gardens.

Table 2.20

NO OF TRADE UNIONS CHOSEN FOR SURVEY

REGION	TRADE UNIONS
DARJEELING	21 (28%)
DOOARS	38 (50%)
TERAI	17 (22%)
TOTAL	76 (100%)

Out of 76 trade unions of 50 tea gardens, 28% were from Darjeeling, 50% were from Dooars and the rest 22% were from Terai region.

Table 2.21

SAMPLE DISTRIBUTION OF TRADE UNIONS ACCORDING TO GARDEN TYPE

REGION	PROPRIETARY	OTHERS	TOTAL
DARJEELING	16(21%)	5(7%)	21(28%)
DOOARS	29(38%)	9(12%)	38(50%)
TERAI	17(22%)	Nil	17(22%)
TOTAL	62(81%)	14(19%)	76(100%)

Others include agency gardens and government undertaking gardens

81% of the sample trade unions were represented by proprietary gardens and the rest 19% by agency and government undertakings gardens.

Table 2.22

SAMPLE DISTRIBUTION OF TRADE UNION OFFICE BEARERS ACCORDING TO AGE OF THE OFFICE BEARERS

REGION	Junior office bearer (40 years & below)	Senior office bearer (Above 40 years)	TOTAL
DARJEELING	12(16%)	9(12%)	21(28%)
DOOARS	14(18%)	24(32%)	38(50%)
TERAI	8(10%)	9(12%)	17(22%)
TOTAL	34(44%)	42(56%)	76(100%)

44% of the Trade union office bearers who have participated in filling in the questionnaires were 40 year and below whereas 56% were above 40 years. It is evident from the above table that mostly elder people were elected as trade union office bearers. (junior office bearers = 40 years and below ; senior office bearers = above 40 years).

Table 2.23

SAMPLE DISTRIBUTION OF TRADE UNIONS ACCORDING TO SIZE OF THE GARDEN

REGION	SMALL GARDEN	BIG GARDEN	TOTAL
DARJEELING	11(15%)	10(13%)	21(28%)
DOOARS	12(16%)	26(34%)	38(50%)
TERAI	8(10%)	9(12%)	17(22%)
TOTAL	31(41%)	45(59%)	76(100%)

For Darjeeling, small garden = 200 hectares or less; big garden = above 200 hectares.

For Dooars, small garden = 400 hectares or less; big garden = above 400 hectares.

For Terai, small garden = 250 hectares or less; big garden = above 250 hectares.

76 trade unions were analyzed according to size of the gardens. Out of 76 trade unions, 41% were representing small gardens and 49% were representing big gardens.

Table 2.24

NO OF MANAGERS CHOSEN FOR SURVEY

REGION	MALE	FEMALE	TOTAL
DARJEELING	14(28%)	Nil	14(28%)
DOOARS	28(56%)	Nil	28(56%)
TERAI	8(16%)	Nil	8(16%)
TOTAL	50(100%)	Nil	50(100%)

Out of 50 sample gardens, none had female as a manager or even an assistant manager. There is no presence of female participation in the management. The tea garden management is absolutely male dominated.

Table 2.25
**NO OF GARDENS CHOSEN FOR SURVEY ON THE BASIS OF
 TYPES OF ORGANISATION**

REGION	PROPRIETORY	AGENCY	GOVT UNDERTAKING	TOTAL
DARJEELING	11(22%)	2(4%)	1(2%)	14(28%)
DOOARS	18(36%)	6(12%)	4(8%)	28(56%)
TERAI	8(16%)	Nil	Nil	8(16%)
TOTAL	37(74%)	8(16%)	5(10%)	50(100%)

Table 2.26
**SAMPLE DISTRIBUTION OF MANAGERS ACCORDING TO AGE OF
 THE MANAGERS**

REGION	JUNIOR (40 years & below)	SENIOR (Above 40 years)	TOTAL
DARJEELING	5(10%)	9(18%)	14(28%)
DOOARS	8(16%)	20(40%)	28(56%)
TERAI	2(4%)	6(12%)	8(16%)
TOTAL	15(30%)	35(70%)	50(100%)

30% of managers who had participated in filling in the questionnaires were 40 years and below whereas 70% were above 40 years. For the purpose of this research work, managers of the age 40 years or below are designated as junior managers and those above 40 years of age as senior managers.

Table 2.27
**SAMPLE DISTRIBUTION OF MANAGEMENT ACCORDING TO SIZE
 OF THE GARDEN**

REGION	SMALL GARDEN	BIG GARDEN	TOTAL
DARJEELING	7(14%)	7(14%)	14(28%)
DOOARS	7(14%)	21(42%)	28(56%)
TERAI	4(8%)	4(8%)	8(16%)
TOTAL	18(36%)	32(64%)	50(100%)

For Darjeeling small garden = 200 hectare or less; big garden = above 200 hectares.
 For Dooars, small garden = 400 hectares or less; big garden = above 400 hectares.
 For Terai, small garden = 250 hectares or less; big garden = above 250 hectares.

36% of managers were representing small gardens and 64% were representing big gardens. Due to large variation in the size of the gardens especially in hill gardens and the plain gardens different criteria have been set up while determining size of the gardens.

Figure 2.1

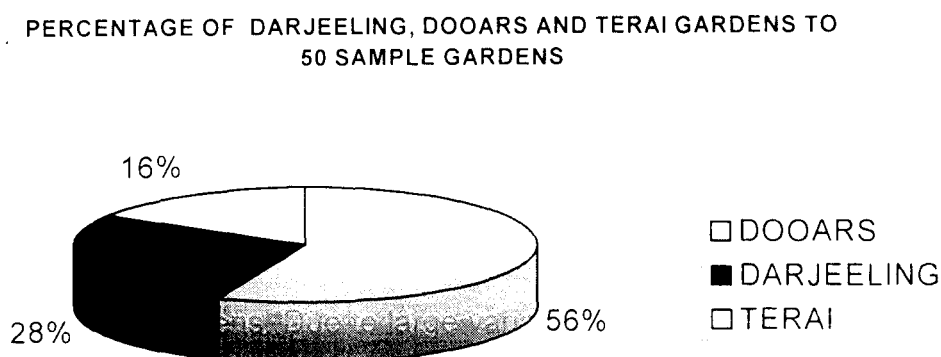


Table 2.28

SUMMARY OF SAMPLE TEA GARDENS OF DARJEELING AREA

Sl. No	Name of the Garden	Area under tea (in hectors)	Gross area (in hectors)	Type of Tea produced	No of workers
1	BANNOCKBURN	147.27	283.80	Orthodox	485
2	DILARAM	195.32	358.80	Orthodox	318
3	HAPPY VALLEY	114.00	162.00	Orthodox	329
4	LINGIA	139.94	220.39	Orthodox	476
5	NAGRI FARM	285.66	571.37	Orthodox	911
6	OKAYTI	208.82	647.00	Orthodox	668
7	ORANGE VALLEY	220.15	347.26	Orthodox	565
8	PHUGURI	225.00	427.00	Orthodox	624
9	RUMGMOOK/ CEDARS	526.30	716.13	Orthodox (Bio-organic)	1942
10	SINGELL	282.57	550.54	Bio Tea	818
11	SOOM	234.61	507.00	Orthodox	848
12	SPRINGSIDE	146.02	216.63	Orthodox	243
13	SUNGMA	281.95	454.55	Orthodox	1030
14	TINDHARIA	150.22	343.70	Orthodox	468

Table 2.29

SUMMARY OF SAMPLE TEA GARDNES OF DOOARS AREA

Sl. No.	Name of the Garden	Area under tea (in hectares)	Gross area (in hectares)	Type of tea produced	No. of workers
1	BAGRAKOTE	491.27	819.00	C.T.C	1413
2	BHOGATPORE	624.10	976.51	C.T.C	1688
3	BINAGURI	554.00	724.78	C.T.C	1344
4	CHALOUNI	538.77	778.96	C.T.C	1299
5	DALGAON	611.15	1069.04	C.T.C Organic	1608
6	DAM DIM	715	821	C.T.C	1388
7	DEBPARA	536.24	851.12	C.T.C	1173
8	ELLENBARRIE	229.46	382.02	C.T.C	511
9	ENGO	109.14	161.81	C.T.C	344
10	GANDRAPARA	779.89	979.31	C.T.C	1831
11	GOPALPUR	431.72	821.90	C.T.C	1120
12	GRASSMORE	766.25	1072.72	C.T.C	1004
13	HILLA	310.00	707.50	C.T.C	779
14	INDONG	472.54	740.00	C.T.C	1239
15	KAILASHPUR	279.06	369.84	C.T.C Green	604
16	KARBALLA	753.67	996.43	C.T.C	1754
17	KILLCOTT	431.48	632.44	C.T.C	917
18	KOHINOOR	395.16	671.73	C.T.C	858
19	LOOKSAN	423.03	747.56	C.T.C	889
20	NEDAM	247.77	335.93	C.T.C	614
21	NEW GLENCOE	319.82	550.72	C.T.C	786
22	RAJA	343.60	601.00	C.T.C	666
23	RANICHERRA	600.42	1226.79	C.T.C	1296
24	RATKAPARA	418.20	532.10	C.T.C	962
25	SOONGACHI	681.37	1052.00	C.T.C	1537
26	TASATI	427.83	600.51	C.T.C Orthodox	1151
27	TOONBARRIE	145.62	259.42	C.T.C Orthodox	254
28	WASHABARIE	434.00	704.00	C.T.C	834

Table 2.30

SUMMARY OF SAMPLE TEA GARDENS OF TERAJ AREA

Sl. No.	Name of the Garden	Area under tea (in hectors)	Gross area (in hectors)	Type of Tea produced	No of workers
1	ASHAPUR	114.68	174.00	C.T.C	295
2	BIJOYNAGAR	254.82	388.96	C.T.C Orthodox	650
3	DAGAPUR	202.65	304.39	C.T.C Green Tea	422
4	HANSQUA	512.93	618.61	C.T.C	769
5	KAMALPUR	64.81	81.18	C.T.C	160
6	KIRAN CHANDRA	218.78	332.00	Orthodox CTC Green	331
7	PANIGHATTA	440.53	617.86	C.T.C	877
8	SUKNA	264.68	333.20	C.T.C Green Tea	405

2.4 DATA COLLECTION

In order to collect required information necessary for the research purpose four sets of questionnaires had been prepared. These questionnaires were meant to be filled up by i) the office clerk (Annexure 2.1) ii) the workers (Annexure 3.1) iii) the trade union office bearers (Annexure 4.1) and iv) the management (Annexure 5.1). The Questionnaire for the management and the questionnaire for the general information were printed in English. The questionnaire for the trade union office bearers and the questionnaires for the workers were printed in English as well as in regional languages.

The Information was collected by personally visiting all the tea gardens. Before approaching the managers of the tea gardens directly; first a letter of introduction was obtained from various Tea Associations operating in Darjeeling, Dooars and Terai. These Tea Associations are formed to protect the interest of the owners of the tea gardens. These associations are run with the help of subscriptions paid by the member tea gardens. In

Darjeeling, almost all tea gardens are the member of Darjeeling Tea Association (DTA). Mainly two associations are active in Terai region. They are Terai Branch Indian Tea Association (TBITA) and Terai Indian Planters' Association (TIPA). TBITA has its office in Bangdubi about 15kms away from Siliguri. TIPA is in Matigara 5 kms from Siliguri.

During heyday of tea industry, single tea garden used to be a member of different Tea Associations. There are instances where one garden was member of 3 to 4 Tea Associations simultaneously. But when the crisis hit the industry and the financial health of the garden started deteriorating, many gardens stopped paying subscriptions to these associations thus becoming defaulter and ultimately losing the membership.

Dooars has more tea gardens than Darjeeling hills and Terai put together. Tea gardens of Dooars are members of three main Tea Associations. These Tea Associations are Dooars Branch Indian Tea Association (DBITA), Indian Tea Planters Association (ITPA) and Tea Association of India (TAI).

Ten workers from each tea garden were selected for filling up of the questionnaires. To gather the opinion of the wide section of the population effect were made as far as possible to include all categories of workers namely garden workers, factory workers, male, female, younger workers, older workers, daily rated workers and monthly rated workers in the sample. In a tea plantation, the employees are usually classified into i) plantation workers including both field and factory workers, ii) staff including office, factory, field medical staff iii) artisans and technician and iv) sub-staff .

The questionnaire for management could be filled in by either the manager or the assistant manager of the tea garden. The questionnaire was handed to them personally with a request to go through it carefully once and clear doubts or confusions, if any. They were given at least 2 days to fill up the questionnaire. For trade union office bearers who could read and write in vernacular, every point of the questionnaire was explained before asking them to fill it up. I came across many such illiterate trade union

leaders to whom I had to read, explain and fill up the responses given by them.

As far as the workers were concerned, because of the low level of literacy in the tea gardens, filling up the questionnaires was a big challenge. In order to explain the points mentioned in the questionnaire in local dialects, I had to take help from person of the locality who could work as interpreter and explain things to the workers in their own dialect. Before all that, the interpreter had to be prepared to be able to do the job expected of him. Once he was ready, ten workers consisting of male, female, garden workers, factory workers, old and young workers were selected. Many of them were unwilling to participate partly because of fear of management and partly because nothing was paid to them for the time they had spent (wasted?) in filling up the forms. When it was told that respondent's identity would be kept anonymous and no name required to be mentioned in the questionnaires, many came forward. Those workers who were willing to participate in the act was individually explained in detail and read each question once, twice and sometimes thrice and requested them to respond. They were not allowed to consult any one but to express their own opinion. The intension here was to obtain free and fair opinion of the workers.

Darjeeling tea gardens are mostly far away from the town and, therefore, are not well connected by roads. Because of the hilly terrain, the roads are narrow and stiff. Only small vehicles plied on these roads. As of the frequency of passenger vehicles are few and far in between, someone wishing to visit these gardens from Darjeeling town had to halt overnight at the garden before making a return journey the next day.

Road communication is somewhat better in Terai and Dooars tea gardens. In Dooars, most of the tea gardens are near national highway; therefore, there is no dearth of vehicles going to these gardens. However, there are few gardens which are in the remote areas of Dooars where only vehicle ply in an entire day is the school bus (not a bus but a Tractor or a truck) reaching the garden children to the school in the nearest town. A

visitor to these gardens has to rely on this only mode of transport. One tea garden which was included in the sample had to be forsaken because the road leading to the garden was too difficult and risky. I had to turn back from the half way. In one of the gardens in Dooars, I had to travel 12 kms by rickshaw one way during mid noon. It was trying time for me as well as for the rickshaw puller.

As for the Terai gardens, barring one tea garden, all other sample gardens are well connected with the wide roads. However, one of the sample tea gardens could not be surveyed because of the difficult terrain and some local political unrest prevailing in the garden.

From 50 sample gardens 286 workers, 76 trade union office bearers and 50 managers respectively filled up the questionnaires. All the copies of the questionnaires totalling 412 (286 for workers+76 for trade unions +50 for management) were scrutinized and coded. Coding refers to the process of assigning numerals or other symbols to answers.

These coded data were fed into the computer using data software called "Fox-pro". Fox-pro is a data based software programme useful in extracting precise information required by the user from whole data file.

2.5 PROCESSING AND ANALYSIS OF DATA

The final analysis was done using software 'SPSS' and 'Microsoft office excel'. While using 'SPSS' and 'EXCEL', the following statistical tools were used:

1. Chi-square: Chi-square test is an important test developed by statisticians. Chi-square test is applicable in large number of problems. The test is, in fact, a technique through the use of which it is possible for all researchers to (i) test the goodness of fit; (ii) test the significance of association between two attributes and (iii) test the homogeneity or the significance of population variance.

For the test the significance level is set at Alpha = 0.5. When the value of Chi-square calculated from the given data comes out to be greater than

the value taken from the chi-square table at $\alpha = 0.05$, then the null hypothesis is rejected and the alternate hypothesis is accepted.

2. Fisher's exact test: When a compute programme calculates a chi-square value, it will usually issue a warning that chi-square may be invalid when too many fe 's are below the level of tolerance. If chi-square is invalid for a two-by-two table, there is an alternative test known as Fisher's Exact.

3. One way and two ways ANOVA: - Analysis of variance (ANOVA) is used to compare more than two means. It is very versatile. It is particularly friendly to experimental application, where we may be comparing the means of the populations group by examining the amount of variation within each of the these sample, relative to the amount of variation between the samples. Under the one-way ANOVA, we consider only one factor and then observe that the reason for said factor to be important is that several possible types of samples can occur within that factor. Two-way ANOVA technique is use when the data are classified on the basis of two factors. For example, a business house can classify its sales data on the basis of different salesmen and also on the basis of sales in different regions.

4. Rank and Rank correlations: In a correlation analysis, where the information is not available in the form of numerical values, in such cases, one can assign ranking to the items in each of the two variables so that a rank-correlation coefficient can be calculated. Rank-correlation coefficient is a measure of the correlation that exists between the two sets of ranks, a measure of the degree of association between the variables that we would not have been able to calculate otherwise. For the test the significance level is set at $\text{Alpha} = 0.5$.

5. Standard deviation: The variance and standard deviation are based on the deviations from the mean. However, instead of using absolute values we square the deviations. Squaring the deviations eliminates negative numbers, because multiplying two negative numbers will result in a positive number. The standard deviations are probably the most widely used and reported measure of dispersion.

6. Simple statistics: Simple statistics like mean, mode, median, frequency, percentage, averages etc. are also used as and when it was found necessary.

While finding out the conflict management styles used by the workers, the trade union office bearers and the management, the Rahim organizational conflict inventory- II (ROCI – II) (Rahim, 1983, Rahim & Buntzman 1989) was used. ROCI – II was designed to measure conflict with superiors, subordinates and peers. Although the original ROCI – II consist of 35 items showing five different conflict styles namely integrating, avoiding, dominating, obliging and compromising, in my study I have reduced these items to 20. These five conflict handling styles have a clustered of 4 questionnaires. (4 questionnaires X 5 styles = 20 items). Each cluster of 4 questionnaires determines a particular style used by the respondent. Each questionnaire has a 5 point scale (where 1= strongly disagree; 2= Disagree; 3 = Half agree and half disagree; 4 = agree and 5 = strongly agree)

Of the 5 styles of handling conflict, avoiding is associated with withdrawal or not to participate in the conflicting situation e.g. 'I usually avoid open discussion of my difference with my boss/subordinates /peers'. Compromising is associated with policy of 'give and take'. e.g. 'I try to find a middle course to resolve an impasse'. Dominating is associated with concern for self and to win at any cost e.g. 'I am generally firm in pursuing my side of the issue'. Integrating is associated with openness, exchange of information so that an agreement can be reached which is acceptable to both the parties. e.g. 'I try to investigate an issue with my boss/subordinate/peers to find a solution acceptable to us.

Obliging is associated with an attempt to pay down the differences and sacrifice the self interest for others. E.g. 'I generally try to satisfy the need of my boss / subordinates / peers'.

Annexure 2.1

Date					
------	--	--	--	--	--

**DEPARTMENT OF COMMERCE
NORTH BENGAL UNIVERSITY
QUESTIONNAIRE FOR GENERAL INFORMATION**

(Please go through the questionnaire carefully and **answer all the questions**. Information collected will be used only for academic purpose and will be **kept completely confidential**. They will not be shared with any other person or / and organization.)

- 1 Name of the Tea company.....
2. Address.....
- 3 Name of your Tea Estate.....
4. Address.....
5. Area under tea (in hectors).....
6. Gross Area (in hectors).....
7. Membership of Associations: i)..... iii).....
ii)..... iv).....
8. Types of tea manufactured
Orthodox , CTC Green Any other
9. Number of workers i) Male..... ii) Female..... iii) Children.....
10. Number of families.....
11. Total population of the Tea Garden.....
12. Number of i) Factory workers..... iii) Garden workers.....
ii) Factory sub-staff..... iv) Garden sub-staff.....
v) Managerial staff..... v) Clerical Staff.....
13. Number of i) Permanent workers..... ii) Casual workers.....
14. Category of the Garden
15. Is it a Proprietary garden Agency garden

16. How many families are provided with housing by the garden?
17. Number of Pucca houses Kuchha houses
18. Number of latrines provided to the workers.
Attached Community(public)
19. No of water connection provided to
Per family Community (public)
20. Is there a primary school in the tea garden? Yes No
If yes, who runs the primary school?
21. Is there a secondary school in the garden? Yes No
If yes, who runs the Secondary school?
22. Does the garden management bear or reimburse the medical expenses of the worker and his family members? Yes No
23. What percentage of the expenses is borne by the garden management?
24. Is there a hospital in the tea garden? Yes No
25. Is there a dispensary in the tea garden? Yes No
26. Is there a qualified doctor in the tea garden? Yes No
27. Does the garden have ambulance of its own? Yes No
28. Is there a Crèche for the children of the female workers? Yes No
29. If, yes is it looked after by the trained crèche attendant? Yes No
30. Does the garden organize any function to reward the workers of the garden? Yes No
31. Does the garden provide food-grains and fuel to the family of workers at concessional rate? Yes No
32. Are the garden villages connected to the nearest town by motorable road? Yes No
33. If yes, who maintains the road? Govt Garden
34. How often does the garden whitewash the workers' quarters? Yes No
35. How many households of the workers have been provided with electricity? Yes No

36. Has there been any strike in your garden only by the workers or /and Trade Unions in the last five years? If yes, how many times and what were the reasons(please furnish the reasons in a line or two)

37. Has there been any lock-out in your garden by the Management in the last five years? If, yes, how many times and what were the reasons (Please furnish the reasons in a line or two).

THANK YOU FOR YOUR COOPERATION

REFERENCES

O'Malley L S S, Bengal District Gazetteers Darjeeling, Logos Press, New Delhi, 1907.

Tea Statistics 200-2001, Tea Board of India, Kolkata,2003.

Rahim M. Afzalur A Measure of Styles of Handling Interpersonal Conflict, Academy of Management Journal, Vol. 26, No. 2,368-376,1983

Grunnings G. F, District Gazetteer of Eastern Bengal and Assam Volume on Jalpaiguri District, Calcutta ,1911.

Government of India, Plantation Labour Act,1951.

Government of West Bengal, West Bengal Plantation Labour Rules,1956.