A STUDY OF ORGANIC TEA CULTIVATION

(A case study of Tinjure Tea Farmer Co-operative Association Ltd., Phakphok Ilam)

A

Thesis Submitted to

Faculty of Humanities and Social Sciences Tribhuvan University
Mahendra Ratna Multiple Campus, Department of Rural Development
Ilam for the Partial Fulfillment of the Requirement of the Master's Degree of Arts in Rural Development

Submitted By

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LETTER OF RECOMMENDATION

This Thesis entitled **"ORGANIC TEA CULTIVATION" (A CASE STUDY OF TINJURE TEA FARMER CO-OPERATIVE ASSOCIATION LTD., PHAKPHOK, ILAM)** has been prepared by Ritu Kanta Khanal under my guidance and supervision for his partial fulfillment of the requirement for the Degree of Master of Arts in Rural Development. This is his own innovative research work. I, therefore recommend this thesis for its final evaluation and approval.

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APPROVAL SHEET

This is to certify that this thesis work, entitled **"ORGANIC TEA CULTIVATION" (A CASE STUDY OF TINJURE TEA FARMER CO-OPERATIVE ASSOCIATION LTD., PHAKPHOK, ILAM)** SUBMITTED BY **RITU KANTA KHANAL**, has been accepted in partial fulfillment of the requirements for the Degree of Master of Arts in Rural Development by this Department in the prescribed format of the Faculty of Humanities and Social Sciences.

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Finally, I am really indebted to my friends Committee of Tinjure Tea Farmer Co-operative Association Ltd, office staff of USAID, Ilam, District Co-operative office for their timely suggestion and data information . I would like to thanks for financial support of my family.

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Ritu Kanta Khanal
Septamber, 2012

ABSTRACT

This study is mainly concentrated on organic tea cultivation of Tenjure Tea Farmer Co-operative Association Phakphok Ilam and high light there participation in the manpower employment opportunity, problems the especially organic tea cultivation management practices, Threats (disease, pest control and agro-forestry, conversion, period) and compare the production and price of the conventional (Non-organic) tea and orgasmic tea.

The life style of the inhabitants of Ilam is areaway. Paddy wheat maize are the major food crops and cardamom, ginger, broom, potato, and tea are the major cash crops of the district. Among which cash crops tea is one of the agro-based and mast manpower oriented farms. To some extent it is to seduce the problem of unemployment and other and other socio-economic problems and also help to protect soil erosion and ecological crisis.

Today conventional tea cultivation creates common socio, medical recessional, physical and financial aspects. The organic agriculture have least chemical for promotion to ecological aspects. The general objective of this study is to undertake study of organic tea cultivation in Tenjure Tea Farmer Co-operative Association L.t.d related who have organic certificate of NASAA. The specific objectives are organic tea cultivation its management, practices, disease pest control, agro forestry, convention period and compare the production and price among the organic and non organic (Convention) tea.

This study is important form both the theoretical and empirical point of view, through it is a small academic endeavor to sketch the real picture of tea cultivation which based on organic. Besides this present study might be helpful of policy makers to formulate the policies to scope with organic tea cultivation. In this agriculture process the life style of human and environment activities might be positive.

However organic tea cultivation have highly participated in human life. It is the compulsion of bread, butter and livelihood. One hand organic tea cultivation

plays an important role to check soil erosion and environment richness. On the other hand it is play a remarkable role the field of human economic and sustainable agriculture development.

The tea cultivation and employment in tea industry is the back bone of inferior and minorities as well as a planet social harmony and development skill and unskilled manpower who might be employed in self tea garden or neighbor's garden. It is more beneficial for the garden and employers.

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CHAPTER - VI

SUMMARY, CONCLUSIONS AND RECOMMENDATOINS

List of Table

List of Figures

ABBREVIATIONS/ACRONYMS

ADB	- Agriculture Development Bank.
BS	- Bikram Sambat
CBS	- Center Bureau of Statistics
CTC	- Crushing Tearing Curling.
CBO	- Committee Based Organization.
C	- Celsius
COC	- Code of Conduct
DDC	- District Development Committee
EM	- Effective Microorganisms
EEC	- East European Country
GDP	- Gross Domestic Product
GTZ	- German Technical Co-operation.
HOTPA	- Himalayan Orthodox tea Producer Association
HIVCOOP	- Himalayan Tea Producer's Co-operative.
IOAS	- International Organic Accreditation Service.
ITC	- International Tea Corporation.
ILO	- International Labor Organization
IOAS	- International Organic Accreditation Service
INGO	- International Non Government Organization.
KM	- Kilo Metter
KTE	- Kanchanjangha Tea State
LISA	-Low Input Sustainable Agriculture.
LOS	-Level of Skiff
LP	-Light Pruning
Ltd.	- Limited
MRMC	- Mahandra Ratna Multiple Campus

NASAA	- National Association for Sustainable Australia limited.
NTA	- Nepal Tea Association
NTCDB	- National tea and Coffee Development Board
NTDC	- Nepal tea Development Corporation.
NTCDB	-National Tea and Coffee Development Board
NGO	- Non Government Organization.
TTFCAL	- Teenjure Tea Farmer Co-operative Association Limited.
TU	- Tribhuvan University
TPC.	- Trade Promotion Center.
UNDP	- United Nation Development Programm
UP	- Unpurning
USAID	- United States Agency for International Development
UNICEF	- United Nation International Children Emergency Fund.
VDC	- Village Development Committee.
WACH	- Women Awareness Center Nepal

Appendix-A
Questionnaire

Household Survey

1. Name :–
2. Address :–
3. Age :–
4. Religion :-
5. Cas /Community :-
6. Maritial Status.
   a) Married. b) Unmarried
   c) Wido d) Divorce
7. It married how many children you have ?
   a) Son ( ) b) daughter ( ) c) Total ( )
8. Education status of manpower
   a) Literate. b) Llliterate.
9. Where is your birth place ?
   a) Phakphok Ekatappa, Chamaita b) Other
10. How long you have been working in tea cultivation ?
    a) Since 20 year b) Since 10 years
    c) Since 10 year d) Since 5 years
11. How many hours do you work in garden ?
    a) 2 to 5 hours, b) 5 to 10 hours
    c) above 10 hours
12. What kind of work you have to do ?
    a) Plucking b) Plantation
    c) Skipping d) Mulching
    e) Others.
13. Have you received any training before the work.
    a) Yes b) No
14. How much salary/profit do you get form tea cultivation per month ?
    a) Rs 500, b) 1000,
    c) 1200

15. What kind of farm you do ?

a) Permanent b) Temporary

c) Seasonal d) Other

16. Have you other duties ?

a) Yes b) No

17. How many times you Invest and how much you get per month.

a) hours b) Rs.

18. Are you satisfied with your work

a) Yes b) No

19. If no why ?

20. Where do you stay ?

a) Own house b) Relatives house

c) In quarter

21. How many members are their in your family ?

a) Son ( ) b) Daughter

c) Other d) Total

22. How many members of your fam9ly are employed in garden ?

23. Can you afford your family by your garden ?

24. If you and your family have any other occupation ?

a) Yes b) No.

25. It yes how many members of your family are involved in other occupation.

S.N.	Name	Occupation	Monthly income
1			
2			
3			

26. Do you have own land ?

a) Yes b) No.

27. If yes how much land you have got ?

28. Is there any school for your children near your garden ?

29. If there any hospital for your family ?

30. What on the following topics is your family member annual income ?

S.N.	Annual income	R.S.
a	Tea garden	
b	Trade	
c	Agriculture	
d	Other if any	

31. What is your families annual expenditure in the following items ?

S.N.	Expenditure	R.S.
	Food	
	clothes	
	Education	
	Agriculture	
	Health	
	Festivals	
	Others	

32. What kind of Satisfaction have you go to from garden ?
33. What are the present problems that you are facing of organic tea garden ?
34. Is there any discrimination in the work in terms of gander role ?

    a) Yes b) No

35. If yes what kind of discrimination ?

    a) b) c)

36. Is there any workers organization ?

    a) Yes b) No

37. Do you think you are exploited ?

    a) Yes b) No

38. If yes who do you think exploit ?

    a) Government b) Garden owner c) Family member.

39. Have you gat any population on environment ?

    a) Yes b) No

40. If yes, What is your sagession to the conventional agriculture ?

41. Have gat any prfit from organic tea garden ?

a) Yes b) No

42. Do you face any difficulties on organic caltivation ?

a) Yes b) No

43. It yes what are they ?

a) Technical b) Financial c) Marketing

d) Others

Appendix-B

Key Informant Survey

Name :

Address :

Name of garden :

Started :

1. How many land have this tea garden ?
2. What types has been product in this garden ?
   a) Conventional b) Organic
3. If organic, what kinds of difficulties you face ?
4. What types of pesticide do you use in your garden ?
5. Have you any problems to go through organic cultivation ?
6. Have you help from your neighbor ?
7. What problems are faced by organic tea cultivation ?
8. How is co-operation between Government tea sector and farmers ?
9. Do you satisfied the price of organic tea ?

Appendix-C
Photos

Organic Tea Garden of Ritukanta Khanal (Ekatappa-5, Ilam)

Organic Tea Gardan of TTFCAL Phakphok, Ilam

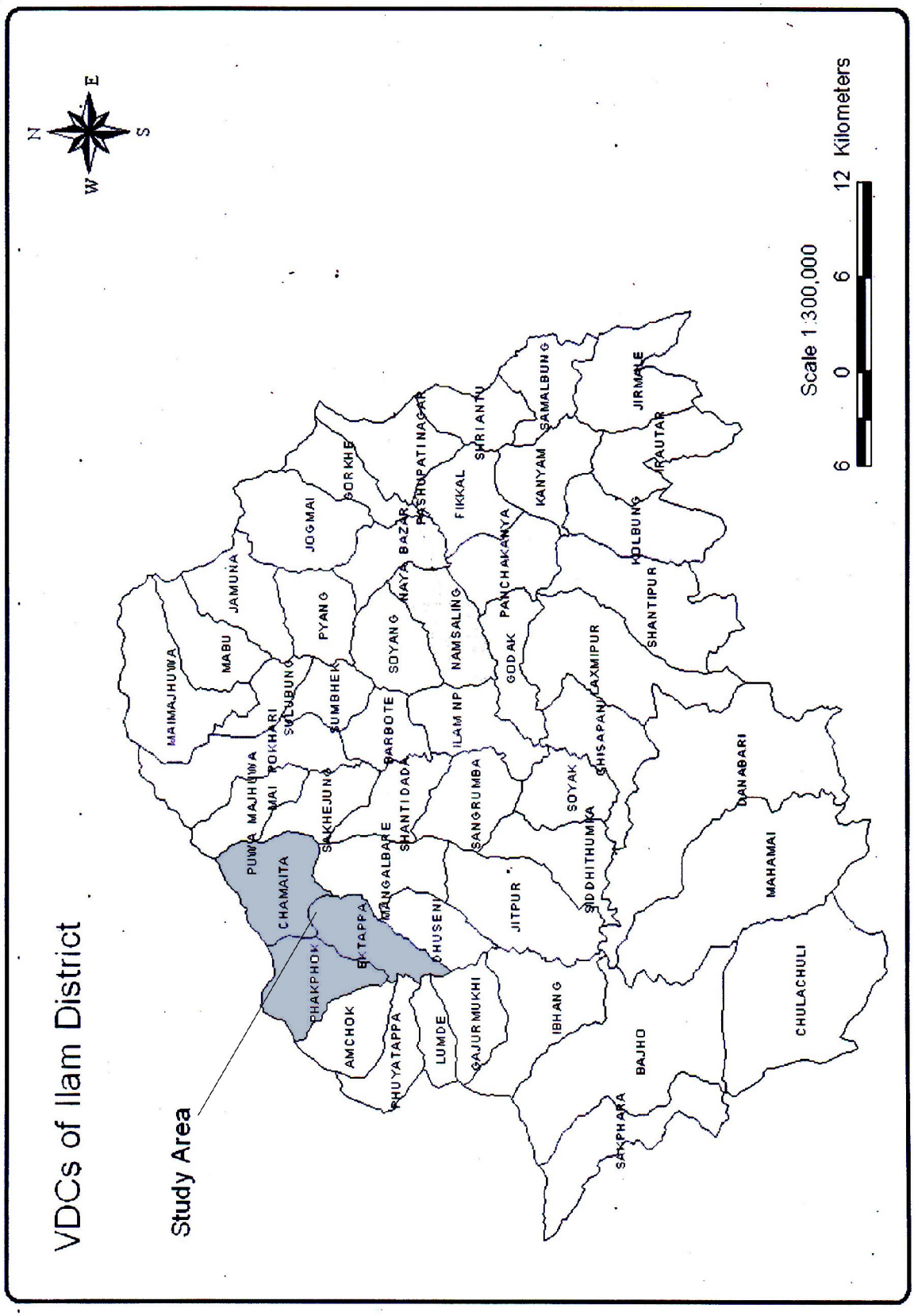
Office of TTFCAL Phakphok

Seminar of TTFCAL Phakphok in B.S. 2067-5 (5 to 9)

Tea Plucking in TTFCAL Gardan

Side seen of Panchthar District

Appendix-D


VDCs of Ilam District
Study Area
N
E
S
W
Scale 1:300,000
6 0 6 12 Kilometers
MAIMAJHUWA
MABU
JAMUNA
JOGMAI
GORKHE
PASHUPATINAGAR
FIKKAL
SHRIANTU
SAMALBUNG
JIRMALE
RAUTAR
KANYAM
KOLBUNG
SHANTIPUR
LAXMIPUR
PANCHAKANYA
GODAK
NAMSALING
MAYA BAZAR
SOYANG
PYANG
SUMBHEK
SULUBUNG
POKHARI
PUWA MAJHUWA
MAI
SAKHEJUNG
PARBOTE
ILAM NP
SHANTIDADA
MANGALBARE
SANGRUMBA
SOYAK
CHISAPANI
SIDDHITHUMKA
DANABARI
MAHAMAI
CHULACHULI
BAJHO
SAKPHARA
IBHANG
JITPUR
DHUSENI
GAJURMUKHI
LUMDE
PHUYATAPPA
AMCHOK
PHAKPHOK
BATTAPA
CHAMAITA

Appendix E

Established Members (2051-7-5) of TTFCAL were

Coordinator : Padam bdr. Tamang
Member : Nar bdr. Khadka
Khadga bdr. Rai
Khadga bdr. Tamang
Ambar bdr. Rai
Kubir shingh Rai
Padam bdr. Basnet
Ratna bdr. Rai
Durga Pd. Khanal
Ritu kanta Khanal
Kul Pd. Rijal
Madav Pd. Paudel
Rajkumar Shrestha

Elected committee (20051-9-29) and (2056)

Chirman-Ritukanta Khanal
Vice " -Kubirsingh Rai
Mambers-Khadga Bd. Rai
-Khadga Bd. Tamang
-Nar Bd. Khadka
-Durga Pd. Khanal
-Padam Gajmar
-Giridhari Poudel
-Padam Bd Rai
-Madav Poudel
-Manager Padam Bd Tamang

Account Committee

Madv Poudel
Durga Pd. Khanal
Padam bd. Gajmer

Elacted commtte 2062 and (2060

Chairman : Tak bd. Paudel
Vice Deu bd. Rai
Member : Ritukanta Khanal
Tulasa Basnet
Ran bdr. Diyali
Raj kumar Shrestha
Laxmi bdr. Shrestha
Ghanendra ku. Rai
Dhansingh Rai
Santadir Tamang
Account committee
Madav Paudel
Durga pd. Khanal
Danshingh Rai

Appendix -F

NASAA CERTIFICATE OF REGISTRATION

RELEVANDARD RELEVANT ACCREDITPR

NASAA Organic standard in compliance with International Organic Accreditation The National Standard for Organic and Service (IOAS)

CERTIFICATE LICENSEE:

Kanchanjungha Tea Estate (pvt) Ltd SL1

Trading as : Kanchanjungha Tes Estate (Pvt) Ltd

GPO Box 8821
Kathmandu
Nepal

NASAA Certification Number : 8024sL1

582 Growers and 438. 25 ha of the Kanchenjunga Tea Estate, located in the panchthar area of Nepal

Grower Groups:	Ha's	Level of Certification
Agejung Farmer Group , Panchami-	20.05	Certified Organic 23 growers
Aphthyare Agejung Farmers Group, Subhan-	40.00	CertifiedOrganic 82 growers
Bangepani Farmers Group Nagi-	16.05	Certified Organic 13 growers
Chhantapu Small Tea farmers group, Nagin	36.95	Certified Organic 36 growers
Chillingden small Farmer Group Bharappa –	53.00	Certified Organic 51 growers
Janata Tea state - 19 growers	16.00	Certified Organic
Keshari Tea Estate, Yaktin -	20.00	Certified Organic 21 growers
Lalikharka Tea groweer Group, Lalikharka	37.65	Certified Organic 15 growers
Lekali organic Tea Group , Panchthar	13.00	Certified Organic 24 growers
Organic orange group, Phidim	5.05	Certified Organic
23 growers Pathivara Tea Estate, Oyam-	51.50	Certified Organic 61 growers
Seselujng Small Farmers Group Yangnam	42.95	Certified Organic 73 growers
Sumhalung Farmer Group,	14.50	Certified Organic 18 growers
Tinjure Tea Farmer co-operative, Phokphok	64.10	Certified Organic106 growers
Tribeni Small Farmers Group, Ranitar -	7.45	Certified Organic17 growers

National Association for sustainable Agriculture (Australia) Limited
CAN 003 260 348 and / or its, wholly owned subsidiary NASAA Certified Organic Pty Ltd,

CAN 101 829 163 Unit 7B, 3 Mount Barker Road Sterling in the state of South Australia 5152

T:+6188370 8455/ f: +61 88370838 1/ enquiries@ nassa. Com au / www. Nassa. Com. Au
Certificate Number. C/03899/2008

Appendix G
NASAA organic code no. of TTFCAL farmers

S.N.	Name of Farmers	*Address*	*NASSA* Cod No	Area of Planted
1	Uddha Bd. Poudel	Phopoka -6	296	43-0-0-0
2	Kamal Praksh Tamang	Phopoka -6	297	32-00-0
3	Birkha Bd. Khatri	Phopoka -6	298	25
4	Man Kumar Tamang	Phopoka -8	299	7
5	Nar Bd. Khadak	Phopoka -6	300	14
6	Dhan Bd Basnet	Phakpok-6	302	7
7	Phaudrsingh Budathoki	Chamita -9	301	30
8	Akal Bd. Khatri	Phakfok -6	303	6
9	Bajbir Rai	Phakfok -5	304	15
10	Ratna Bd. Rai		305	10
11	Ram Dev Rai	Phakfok -5	306	40
12	Raj Kumar Shrestha	Phakfok -5	307	8
13	Laxmi Pd. Khanal	Ekatappa-4	308	5
14	Deu Bd. Rai	Chamita-9	309	4
15	Ram Bd. Diyali	Chamita-9	310	7
16	Ganesh Bd. Shrestha	Chamita -9	311	1
17	Kausila Shrestha	Ekatappa-2	312	3
18	Daran Bd. Shrestha	Ekatappa-2	313	2
19	Damber Kumari Shrestha	Ekatappa-2	314	10
20	Purna Bd. Bashnet	Phakfok-6	315	10
21	Ram Kumari Rai	Phakfok-6	316	2
22	Hari Pd. Korila	Phakfok-6	317	7
23	Ragubir Poudel	Phakfok-6	318	2
24	Kedarnath Khanal	Ekatappa-4	319	15
25	Suddhabir Rai	Phakfok-6	320	8
26	Dhan Raj Basnet	Phakfok-6	321	8
27	Padam Bd. Tamang	Phakfok-6	322	5
28	Lal Bd. Khatri	Phakfok-6	323	6
29	Santabir Ramang	Phakfok-7	324	7
30	Ganesh padya Khanal	Phakfok-6	325	10
31	Durga Pd. Khanal	Phakfok-7	326	10
32	Lok Nath Khanal	Ekatappa-4	327	7
33	Chandra Bahadur Tamang	Phakphok -6	328	4
34	Pabitra Parajuli	Phakphok-7	329	40
35	Khadak Bd. Tamang	Phakphok-6	330	40
36	Dal Bahadur Rai	Phakpok -5	331	40
37	Kabirman Baraili	Chamita -9	332	5
38	Pradad Sing Rai	Chamita -9	333	6

39	Purna Bd. Tamang	Phakpok-4	334	6
40	Padam Bahadur Rai	Chamita -9	335	6
41	Mahendra Dahal	Phakpok-6	336	5
42	Ran Bd. Bashnet	Phakpok-7	337	10
43	Chandra Bd. Paudel	Chamita -3	338	2
44	Bichari Tamang	Phakpok-6	339	8
45	Dhanraj Tamang	Phakpok-8	340	8
46	Jit Bd. Thapa	Ekatappa-1	341	30
47	Tika Ram Paudel	Ekatappa-1	342	5
48	Indra Kumar Paudel	Ekatappa-1	343	10
49	Thir Pd. Korila	Ekatappa-1	344	20
50	Prem Bd. Shrestha	Ekatappa-1	354	8
51	Lalbir Rai	Phakpok -5	346	20
52	Dik Bd. Thapa	Ekatappa-1	347	30
53	Dhan Bd. Rai	Phakpok-5	348	10
54	Kul Pd. Poudel	Chamita -9	349	2
55	Uttam Prakash Poudel	Chamita -9	350	4
56	Damber Bd. Deyali	Chamita -9	351	5
57	Kamal Rai	Ekatappa-5	352	2
58	Bir Bd. Bishokarma	Chamita-9	353	18
59	Nayan Bahadur Rai	0Chamita -9	354	6
60	Chandra Bd. Shrestha	Ekatappa-3	355	4
61	Padam Bd. Tamang	Phakpok-6	356	1
62	Nagendra Bd. Khatri	Phakpok-6	357	5
63	Prajapati Khanal	Ekatappa-5	358	5
64	Santa Kumar Tamang	Phakpok-8	359	14
65	Shadev Rai	Ekatappa-5	360	10
66	Ratna Bd. Rai	Phakpok-4	361	15
67	Lok Bd. Rai	Chamita -9	362	13
68	Kubirshing Rai	Phakpok-5	363	40
69	Bal Bd. Tamang	Phakpok-8	364	4
70	Dil Bd. Tamang	Phakpok-6	365	2
71	Rajendra Bd. Tamang	Phakpok-7	366	2
72	Ratna Bd. Tamang	Phakpok-8	367	5
73	Bam Bd. Tamang	Phakpok-8	368	4
74	Khadga Bd. Rai	Phakpok-6	369	24
75	Narbir Rai	Chamita -9	370	30
76	Madhav Poudel	Chamita -9	371	20
77	Gangaram Paudel	Ekatappa-4	372	20
78	Tek Bd. Paudel	Chamita-9	373	15
79	Amrit Kumar Paudel	Chamita -9	374	5
80	Bhupendr paudel	Chamita -9	375	6
81	Ram Kumar Rai	Chamita-9	376	2
82	Hari Bd. Khatri	Phakpok-6	377	24

83	Pradip Pd. Tamang	Phakpok-6	378	10
84	Bhanubhakta Korila	Phakpok-6	379	3
85	Tek Ram Rai	Phakphok-5	380	20
86	Dhansingh Rai	Phakphok-5	381	4
87	Homnath Bashnet	Phakphok-6	382	15
88	Rambir Rai	Phakphok-5	383	12
89	Khadak Pd. Rai	Phakphok-6	384	30
90	Dik Bd. Rai	Phakphok-5	385	5
91	Pahalman Bhattarai	Phakphok-6	386	20
92	Til Bd. Rai	Phakphok-6	387	20
93	Durga Bahadur Rai	Phakphok-6	388	24
94	Lila Bd. Rai	Phakphok-6	389	16
95	Tulasa Badnet	Phakphok-6	390	10
96	Pream Bd. Bhawan	Phakphok-7	391	7
97	Karna Bd. Thapa	Phakphok-7	392	8
98	Keshab Pd. Korila	Phakphok-7	393	5
99	Ritukanta Khanal	Ekatappa-5	394	21
100	Devi Khanal	Ekatappa-5	395	15
101	Bishnu Pd. Khanal	Ekatappa -5	396	4
102	Amar Bd. Rai	Phakphok-8	397	24
103	Tanka Bd. Tamang	Phakphok-5	443	5
104	Kul Pd. Poudel	Phakphok-6	444	6
105	Jaya Bd. Chamling	Phakphok-5	445	5
106	Prearaj poudel	Phakphok-6	446	5

Source : Field Survy TTFCAL(2012)

CHAPTER -I

INTRODUCTION

1.1 Background of the Study

Nepal is Himalayas Kingdom of 1471181 sq.k.m. Geographically all most Nepal is located in South-East Asian between $26^{0}22^{1}$ to $30^{0}27^{1}$ North latitudes and $80^{0}04^{1}$ to $88^{0}12^{1}$ East longitudes. The country is about 885 K. m. long from the east to west its width is average about 193 k. m. from north to south. Nepal is landlocked where bordered by India the west, south & east and Tibet region of China in the north. Nepalese culture is a combination of northern and southern. Asian representing no less then 60 ethnic groups II major languages and two major religions (Dhakal 2002:3)

Nepal is one of the poorest countries of the world. Due to rapid growth of population (2.25% C.B.S) is further ham ping the development efforts. We have very few possibilities of industrialization and limited scope for agriculture development. In such a situation we have comparative advantage in the field of water resources, tourism and cash crops agriculture.

Nepal is an agro-based country and its more then 80 percent of the total population are engaged on agriculture sector. Agriculture accounts for around 40 percent of total gross domestic product (G.D.P.) of Nepal. 70 percent of the total export is represented by agro-based products. In the beginning, agriculture products were produced only for home consumption, but now days it is the source of the export and raw materials to produce final goods. This earns foreign currency. Due to the lack of modern technologies, the contribution of agriculture sector to G.D.P. is decreasing every year in Nepal.

There are two kinds of crops. These are cereal crops (rice, corn, millet, wheat, maize, paddy, barley etc.) and cash crops (cardamom, milk, potatoes, jute, tea, ginger, coffee, sugarcane, oil-seed and so on.)

Tea is one of the best significant exportable cash crops among the above cash crops. Thus, it is the major source of foreign currency which balances the Nepalese economy.

1.2 Historical Background

The most popular non-alcoholic beverage is tea , obtained by soaking the processed leaf of tea plant. The word 'Tea' comes from 'Te' which used in the Chinese dialect of the non-alcoholic beverage, tea is the most popular drink being consumed by one-half the world's population.

Tea belongs to the genoas Camellia and family Camelliaceae. Camellia through includes 82 species, only two species Viz, C. Assamica and C. Sinensis are the original species of tea. As they were highly crossable with each other, the present day seeding (Jat) are hybrids of these two species and are often referred as C. Assamica Lasiocalyx. It is an ancient cultivate plant and it is use as beverage in south India and China. A native of south east Asia i.e. China and known to Chinese as early as 2737 B.C. It become as common beverage in China during the seventh century. (Kumar and peter 2002)

First of all the tea was used for medicine to promote all kinds of illness of human physical and mental body. After a long time in the sixth century it was used for drinking. In the thirteenth century it was taken from China to Japan (Qusu). In this way tea speared all over the world. In mid the seventeenth century tea was entered in to the Europe.

The word 'TEA' has been derived from the Portugal word 'TCHA' or English word 'TEA'. But all have the same meaning that is 'Tea'. England introduces the tea in Europe. East India Company brought the specialists of tea from China in 1834.

But this program was not succeeded because China gave only few special plants or workers. Robert Fortune entered in to the cultivation in tea of China with Chinese dress who knew the Chinese language in 1835. After four years he returned to India as a specialist with twenty thousand plants of tea and six tea specialists. In this way tea cultivation was start in India. Lewang is the first place of tea cultivation sector in Darjeeling in 1839. Slowly it expanded in the Tarai land of India in 1862. Assam tea Estate was established in 1840. After the establishment of Assam tea estate other tea gardens were established after 20 years. All plants were Chinese. Dr. Campbell and Dr. White started tea cultivation in Darjeeling on their gardens. NRB (2056) K. Arunachalam (1995:2).

1.3 Tea Plantation and Development in Nepal

The history of tea plantation in Nepal is about 1.5 century old. The legend says that the beginning of tea plantation in Nepal dates back to the year 1863 (1920 B.C.) when the Mr. Gajaraj sing Thapa, the chief Administrator of Ilam district planted the first tea garden currently known as 'Ilam tea Estate' similarly in 1865. 'Soktim Tea Estate' was established in (1959 B.C.). First private tea plantation estate namely 'Budhakaran tea Estate' was established in 1966 (N.T.A 2005). Rapid plantation started in Nepal after the king Birendra declared the eastern zone as 'Tea zone'.

In 1992 the Government established National tea and coffee Development Board (N.TCDB). Nepal tea association (NTA) Organization of tea packagers and exporters where established in 1995. Similarly Himalayan orthodox Tea products Association (HOTPA) came in to existence in 1998. National Tea policy in 2000 and NTDC were privatized in same year. Himalayan Tea Producer's Co-operative (HIMCOOP) Co-operative of tea exporters was established in 2003. The tea sector was established in 2004. So on Tea co-operative association was established in 2004. The main ambition of all these Association is to enhance quality tea production and promote domestic and International market.

Generally two types of tea are produce in Nepal, they are orthodox and CTC Tea. The orthodox tea is produced in the Hills namely Ilam, Dhankuta, Panchthar,

Terathum, Sindhupalchok, Nuwakot, Ramechhap District, while the CTC tea is produced in the Jhapa District of Terai Jhapa and Ilam are main tea predicting Districts share in total tea production about 97 percent of tea for the year 2008/2009 (Based on NTC DB2067 data) . The total land aria of tea production in Nepal is around 16718 hectares, among then 1.67 Million Kg is orthodox tea more then 90 percent orthodox tea has been exported to India and Overseas Countries and rest is partially used for direct consumption and partially for defending purpose in the black tea to import in with good flower. CTC. Tea being domestic market for orthodox tea is limited and it is mainly export oriented due to it's demand and high price value. Now a buys 'Green tea' is a type of tea made solely with the leaves of camellia silences that has undergone minimal oxidation during processing. Over the last few decades green tea has been subjected to many scientific and medical students to determine the extent of it's long purported health benefits, with some evidence suggesting regular green tea drinkers may have following advantages.

1. Reduce cancer
2. Prevent heart disease
3. Fight against aging
4. Help to weight loss
5. Prevent arthritis
6. Make strong bones
7. Prevent diabetes and obesity
8. Prevent high blood pressure
9. Prevent food poisoning
10. Prevent cold and full
11. Prevent from tooth decay
12. Stop HIV virus spreading.

1.4 Organic Tea Cultivation

Modern organic agriculture farming father was Poland. Organic agriculture is a production system that sustains the health of soil ecosystems, biodiversity and cycles adapted to local conditions rather then the use of inputs with adverse effects. Organic tea farming is based on four principles that are-

1. Principle of health
2. Principle of ecology
3. Principle of Fairness
4. Principle of Care

Organic tea Farming promote and enhances biodiversity, biological cycles soil biological activity through management practices that restore maintain and enhance ecological harmony. The organic tea production system is different from conventional tea production. This proposal focused on the some management practice with respect to nutrient disease, pest and agro forestry and conversion period.

There is a great demand for Nepalese organic tea in Japan, and other Overseas Countries. Now for these purpose A.D.B., Tea sect, NTDC, HOTPA, of Nepal has also been playing a significant role in the context of tea development in Nepal. Tea plantation in Nepal also utilize the lands otherwise wasted for other agricultural cultivation.

2. Statement of the Problem

Tea is the best friend for all modern people, is one of the major exportable cash – crops and habitual consuming crop by every person throughout the kingdom. It plays a significant role in the economic life and sustainable development process mainly, tea production plays a major role in the economy of the eastern Hilly and Terai districts of Nepal. There is high demand of organic tea in Internal and external market. The potentiality of tea is high. The social economic condition is suitable for

tea in hilly area of Nepal. The cultivation area covered by tea is very small. The organic tea cultivation area covered by unmesurable.

There is a high potentiality of organic tea Farming in eastern Hilly Districts of Nepal. Climate is suitable for it too. This crop may be significant source of cash earning in those districts. Ilam, Panchthar, Terathum, Dhankuta, earn cash earnings by the organic tea production. In spite of these organic tea in Nepal is not much successful and are not able to meet the Internal and external demand. This study looks in to different aspects of organic tea farming some management practice with respect to nutrient, disease pest and agro forestry and conversion period.

3. Objectives of the Study

The major objectives of this study are as follows.

1. To show the current tea production and tea plantation area in Nepal.
2. To study and compare the production and price of conventional tea and organic tea,
3. To study organic tea farming management practices in the study area
4. To find out the organic farming and it's role in environment.

4. Importance of the Study

This study is helps to understand some basic things as below.

1. What role does tea play to increase income for coming generation?
2. Why does organic tea is not farming rapidly?
3. What kinds of facilities are to be promoted to the organic tea farming by the government, Nepal Tea and Coffee Development Board?
4. What is the future prospect of organic tea farming?
5. What are the methods to organic tea farming?
6. What is relationship between organic tea farming and environment?

5. Limitation of the Study

There are very few studies regarding potentialities of organic tea cultivation to of particular place. This study helps to identify the major organic tea cultivation and assess the present situation of the cultivation in Tinjure tea farmer co-operative region which help the organic tea farmers and policy makers to frame appropriate policies, techniques and programs in order to improve the tea cultivation. The main propose of this study is to divulge the existing and potential organic tea products of the study area and give some recommendation to develop this region as a model tea cultivation, marketing, and technique.

Any kinds of research works have been done in certain area of limitation but it determines it's nature, needs ,situation and area of study . This study has some limitations which are as follows.

1. The research is conducted in 'Tinjure Tea Farmer co-operative Association' (Phakphok, Chamaita, Ekatappa V.D.C. area) of Ilam district and hence the result of the research can not be generalized to others.
2. This research was based on the sample data collection in Tinjure tea Farmer co-operative Association of Ilam district.
3. The result is applicable only for the study area.
4. The study was conduct at least 106 various occupational individual persons of Tea Farmer co-operative area and hence the result of research can not be generalized for others.
5. The conclusion/result was derived from the research depends on the reliability of the primary data and secondary data collected by questionnaires and survey records.
6. The study was mainly based on field survey data, there may be respondents basis and secondary data.
7. The study highlights the organic tea farming of study area, climate, soil, useful farming figures.

8. The study is concerned only about the subject matter of organic tea farming.

9. This is a descriptive study through qualitative and quantitative data.

10. Only five years of production distribution area of trade balance (supply) are shown

6 Organization of Study

This thesis divided into six chapters as follows:

Chapter One : Present introduction of the study, statement of the problems, objective of the study, Justification of the study and limitation of the study.

Chapter Two : Discusses the relevant literature of different issues related to the Organic Tea Cultivation from the different perspective.

Chapter Three : Present the methodology adopted for the study to collect data from the field and the method of analysis.

Chapter Four : Present the research data analysis and presentation.

Chapter Five : Present the Concept of Organic Tea Cultivation, soil treatment, prospect challenges, pruning, skiff, tipping.

Chapter Six : Present summary, conclusion and recommendations.

CHAPTER – II

LITERATURE REVIEW

''Review of the related literature'' is an integral part of the entire research process. It is the critical assessment of the research topic. It is a foundation to the study and it helps to gather information and develop new knowledge, investigate idea and results. As a result, it provides the study more strong, supportive and justify. It provides the background information about the research topic.

2. Review of the Literature

Thus this chapter the review of the available literature such as books, research papers, articles, published by various scholars farm different perspective focusing in the field of organic tea farming.

Nepal is an underdeveloped agricultural country where the agriculture sector is very much backward and traditional, and it does not follow the modern technology fairly. Therefore it is necessary to developed the country through cash crop agriculture. Tea is a cash crop which is the primary necessities from the economic point of view and as demand fulfilling means of majority of population. Tea plantation was started in very earlier but it came as industry after the establishment of NTDC with the objectives of bringing self-sufficiency by producing best grade of tea to earn foreign currency.

The cultivation of tea had begun more then 1.5 century ago in the eastern region of Nepal. Nepal Tea and Coffee Development Board in its recent bulletin pointed out other new areas for tea cultivation. It mentions some districts as Gorkha, Nuwakot, Sindhupalchok, Sinduli etc. which are suitable for tea farming.

Kansakar (1985) concluded that Nepal's tea plantation is characterized by very slow progress owing to the emergence of tea estates under private sector during late 1950's and early 1960's. Again he said ''tea plantation in Nepal has been going on

without scientific experiments. The lack of such scientific experiments are the main reasons behind low yield of tea and the very slow development and expansion of tea plantation in Nepal.''

Organic agriculture is a production system that sustains the health of soil, ecosystems and people. It relies on ecological processes, biodiversity and cycles adopted to local conditions, rather than use of inputs with adverse effects. Organic tea farming and management practices that restore maintain and enhance ecological harmony. The organic tea production is different from conventional tea production.

Modern scientific technology encourages the use of chemical pesticides, herbicides, fungicides and chemical fertilizers for the high crops production. It creates the whole agriculture production chemicalization environment and soil become unhealthy all biodiversity and ecosystem have been sick and whole ecology becomes chemicalized. The modern agriculture technology creates the farming system an organic. Organic cultivation system deals as whole elements of farming i.e. fertilizer, soil management, plant or seeds selection, irrigation, pest and diseases management, biological control method. In that case direct control measures with natural pesticides may be appropriate in organic tea cultivation.

K Arunachalam (1995) The natural home of the tea plant is in the area of monsoon climates, where there is worm, wet-summer and a cold, dry of less wet winter. If the differentce between the daily average temperature in January and July is more than about $11^{o}C$, The tea plant has a dormant period or a slow grouth in the cold months, during which the harvesting of tea leaf becomes uneconomical. Temperature of Hankow, Tocklai, Vientiane, Laos art indicative of the hapitat of the tea plant. Same the climates are in Ilam, Pancthar, Dhankuta, Teharathum, Sindupalchook and Jhapa of Nepal.

Ganguly (2000), Tea plantation in Dargjeeling had started sometime in 1850's as a trial and commercially in 1852, by the Britishers. Since then up to 1960's tea farming was more or less organically précised and gained popularity at EEC. Countries for its excellent aroma which could not be produced in any other part of

the globe, because of it's typical climate and soil character under favorable and healthy green environment. Tea estates gradually underwent changes and most of them have become environmentally barren. These transformations were the result of following the philosophy of short term gains. But what could be done now to alter this situation? How this heritage of the queen of Hills could be saved? Answer is readily available, for a long term sustainability take the route of organic farming.

Baskota (2009), one hand organic tea production in Nepal is difficult factor, on the other hand it is difficult to marketing. Market of organic tea is not only internal it is based on international.

Acharya (2009), Organic agriculture is a production system that sustains the health of soils ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local condition rather than the use of inputs with adverse effects. Organic tea framing is based on four principles that are principle of health, principle of ecology, principle of fairness and principle of care. Organic tea farming promotes and enhances biodiversity, biological cycles, soil biological activity through management practices that resort, maintain and enhance ecological harmony. The organic tea production system is different from non-organic tea production.

Oli (2009), The industrial revolution, the tea production was started from western countries. organic agriculture system was the cause of pollution. The pollution threats animal and plants health. Rasel Karson research the dangerous result of pesticide and she advice the organic agriculture system. increase the productivity of agriculture farmer must be use organic fertilizers monaural and pesticide.

Gajmer (2009), Eastern part of Nepal is the tea zone of country. The tea plantation was 157 years old, which is in Ilam. Though toe tea cultivation framers economic status and living stander is increasing. Tea cultivation has given an opportunities and job as a half of the total population in this district. But tea cultivation system must be develop as the demand of national and international market.

Sapkota (2011), State that development of agriculture sector mainly depends on modernization and commercialization. To grab the opportunities from the global market, their agriculture product should be competitive. As regard to tea which is high value agro-product and export potential product of Nepalese agriculture it is facing the various problems.

Subba and Ghimire (2011), Organic agriculture is not easy agriculture system. The area of organic is around by buffer zone. The buffer zone must be surrounded minimum 100m pre-conversion period must be 10 years. It is necessary to calculate the input which are used in conversion period.

Acharya (2012), Organic agriculture is one of several approaches to sustainable agriculture development practiced today, which is ecologically sound economically viable and socially just. The Nepal has gone some six decades with the popular paradigm of commercialization of agriculture but gone nowhere-instead embracing such grotesquely destructive green-revolution approach it remained at the bottom end of the overall agriculture development indicator. The conventional agriculture focused merely on increasing yield to meet growing food needs of increasing population, and paid little concerns to sustainable use of locally available natural and human resources. The resulted in intensive and indiscriminate use of agro-chemical inputs; agricultural lands continued to shrink, and farming system led to environmental degradation such as depletion of soil and soil fertility, decline in water availability and increase in different forms of pollution, At the same time, such practice upset both environmental resources and indigenous knowledge system rendering the agriculture system unsustainable and sub-productive.

In fact it is increasingly becoming more difficult to come up with the forces of world market in a time when monopoly power of some large corporations is increasing in food system. Again, given the exaction socio-economic structure of Nepalese peasantry, which is characterized by preponderance of small scale farmers and large area of land under hill and mountainous formation, and quite apathetic congaing trend of real-satiation of land and cultural devaluation of labor in the society, the conventional approach of agricultural policy is not going to work

anymore, It calls fr alternative way of farming that should consider farmers as an active element of decisions making not as the passive entity in the recipient end. A good agricultural strategy for Nepal can be prepared through an active involvement of farmers, their representatives and those policy makers who have realized the follies of donor-dominated visions.

Organic agriculture is still in the early stages in Nepal. The importance of organic agriculture is being realized not only by farmers who have been using chemical fertilizer and pesticides for the last four decades but also by the policy makers, intellectuals and sensitive citizens after observing the deterioration situation in the agriculture sector. The ever rising price of chemicals (fertilizers, pesticides, etc). is another important factor for farmers looking for alternatives in order to sustain their farm productivity ad livelihoods. Moreover, Nepal is largely dependent on climate-sensitive sectors, such as rain-fed agriculture; its fragile mountain ecosystems and peculiar topography has drawn attention no the organic farming. Increasing use of agro-chemicals, higher production cost and deterioration ecosystem health have advocated the need to change traditional and external input use agriculture towards safe and sustainable organic production. Several small scale researches have revealed that consumers are actually willing to pay premium prices for organic products thus dismissing the possibility of not getting proper prices in market. So far establishment of commercial organic farming in Nepal was started in the early 1990s. Though farming farming accounts for small segments in terms of both acreage and production, it is gaining momentum for its ecological importance and economical opportunities. Recently, there have been growing interests from both government and non-government sector at different levels for it's promotion, and farmers have been growing different organic crops individually or collectively. The common practices adopted by the organic growers are crop rotation, natural pest management and using bio- fertilizer and organic manures mainly farmyard manure ,natural pest management and using bio-fertilizer and organic manures mainly farmyard manure ,vermin-compost and green manure in soil fertility management. The major organic products grown in Nepal and available in the market are tea , coffee, ginger, fresh-vegetable ,honey and herbal products. Fortunately, many

agricultural products especially in the hills area organic by default. And there is systematic focus on organic farming in tea and coffee after the e establishment of National Tea and Coffee Development Board. The organic tea though its supply in lagging much behind its demand, is being exported in several countries in reasonable price.

Even a cursory outlook in the different plans and policies reveals they are not encouraging organic farming in the mass scale. Till date, the Agriculture Perspective Plan (1994/95-2017/18) has been considered as a guiding strategy towards agricultural development in the country that aims at achieving increased agricultural economic growth through priorities on intensive use of limited inputs essentially non-organic. The plan is basically apathetic to organic development of agriculture since harnessing comparative advantages of available resources through organic agricultural products is not possible under exaction system of indiscriminate markets for organic and inorganic products in the country. The 10th Plan (NPC, 2003) and National Agricultural Policy (MOACm 2004) have, for the first time, spelt out policy statements regarding promotion of organic farming in the country. The Agriculture Policy, 2004 has policy statements for encouraging organic farming, supporting organic products certification minimizing adverse effects of agrochemicals in livestock products, land, water and other aspects of environment, improving production and usage of organic manure, enchanting local participation in food quality management and regulating use of pesticides and Genetically Modified Organisms, GMO. The then and succeeding periodic plans emphasize on promoting integrated plant nutrients and pest management and mentions the explicit health concerned. But their implementation is apathetic. At a time writing this piece, a long-term document of agricultural sector, Agricultural Development Strategy (ADS) is being hatched among the top bureaucrats with millions of rupees in their coffer. It is not yet in public domain that which approach they are emphasizing for promoting agriculture sector, we are now in position to create pressure for eco-friendly and sustainable approach to protect out life and livelihood.

At last integration polices in organic production promotion and trading is crucial. Implementation of organic standards and certification programs, demarcated organic production zones organic-inorganic price dissemination, necessary institutional arrangements and identification of priority activities are important. The most important thing is to acknowledge we have alternatives that protect the Earth, protect our farmers, and protect our health and nutrition.

2.1 Organic Farming is Based on the Following Principal Objectives.

1. To produce sufficient quantity of food of high nutritional value
2. To interact in a constructive and life enhancing way with all natural systems and cycles:
3. To encourage the formation of biological cycles within the farming system involving micro-organism soil flora and fauna:
4. To increase long term fertility of soil
5. To use as far as practicable renewable resources in locally organized agricultural system
6. To work as far as possible in a closed system with regard to organic matter and nutrient elements :
7. To provide ideal living condition to all livestock :
8. To minimize all sorts of pollution that may result from chemical based agricultural practice :
9. To maintain genetic diversity of the agricultural system and its surroundings including the protection of plant and wildlife habitats :
10. To consider the eider social and ecological impact of the farming system :
11. To respect natural ecological balance and avoid synthetic fertilizers pesticides wed sides etc and to avoid forcing of plant/animal growth by industrial method of livestock management
12. To provide safe working environment
13. Low input sustainable agriculture (LISA)
14. Compromise were compromise is inevitable due to ecological conditions in which we live inputs within the principles may judiciously be followed .

2.3 Fundamental Requirements for Growing and Maintaining Tea Plantations Are

(a) soil treatment

(b) Control of pests/fungal diseases

(c) Control of weeds.

Research is in progress to find out Organic solutions to maintain soil nutrient status and also to keep the pests and diseases under control based on the foretasted principles. However the following methods are being tried out for introducing organic practices.

a) Soil treatment

b) Pest control through organic technique.

c) Minerals base on organic

CHAPTER -III

RESEARCH METHODOLOGY

There are various methodologies that will be applied to get related information and fact for their specific research. However there is not method to collection technique will be selected for any study. So that researcher can get maximum information by utilizing this time, cost and other available resources. For this study a combination of data collection will be used. Reliable and relevant study can be made possible only by applying scientific method. So the primary purpose of this chapter is to discuss and design the framework for the research.

3.1. Rational of the Selection of the Study Area

Tenjure Tea Farmer Cooperative Association Ltd. was remarkable co-operative. It was established in 2051 B.C. with the objective of tea cultivation and producing best grade of tea to earn foreign currency and get high living standard of framers. Also TTFCAL is famous for organic tea production. It gate organic certificate through Kanchenjunga Tea Estate (Pvt) Ltd. SLI by NASAA. This study helps to identify the tea production and its value to compare between conventional tea production and organic tea production.

3.2 Research Design

To meet the objective of the study descriptive and exploratory research methodology was adopted. This study depend upon the response of the respondents. Since the aims at findings out about price value and quantities of production to compare up to five years time duration. And field study was also conducted. The research design was also historical in nature.

3.3 Nature and Source of Data

There were two types of data to be used in this study, primary and secondary. The primary data were collected through interview, questionnaires with selected respondents and secondary data were collected from various articles, annual reports, newspaper, bulletin, principal, books and previously done thesis.

3.4 Method of Data Collection

To generate the primary data the structured questionnaire, semi or structured interviews and field observation methods was applied. By using the following techniques, data were collected.

3.4.1. Field Observation

Each households selected in sampling were visiting and observing. The data was recorded while observing the household their accessibility in TFCAL area.

3.4.2. Questionnaire Survey

Open questionnaire was prepared to generate the realistic and accurate data from household's survey of the benefited people. The respondents were requested to fill up the questionnaire. In case of the respondents who can not fill up the questionnaire, question were asked to the respondents and answers were filled up to collect the required data.

3.4.3. Key Informant Interview.

The primary data were also collected from Key informants using the semi or unstructured interview methods. The interview was taken as cross checking for data obtained from questionnaire. Key information was taken from related C.B.O. (TTFCAL).

3.5 Tools of Primary Data Collection

Questionnaire, observation, checklist, site observation checklist, structured and unstructured questionnaire were the tools for data collection in this study.

3.6 Tools of Secondary Data Collection

To collect the secondary, data library study books, journals, magazines, newspapers etc were consulted.

3.7 Data Presentation and Analysis.

The data and information collected by various tools and techniques were analyzed using various statistical methods according to the need and nature of data. Mainly tables, charts, diagram etc, were used as required. Anyway the data were qualitative quantitative analyzed by descriptive method. Report writing was done as per the suggestions to the supervisor.

3.8 Universe and Sample Size of The Study

Tinjure Tea Farmer Co-operative Association Ltd. area (Ekatappa, Chamaita, Phakphok VDC of Ilam district) was taken as the universe for the study but due to various constraints whole universe can not be studied. So only the selected areas of TTFCAL were included as the research area, which are potential area/ places from the organic tea cultivation point of view. The respondents were those people who are well known having more knowledge and interest about organic tea products. Sample size was at least 106 various occupational individual persons of selected VDC of Ilam district/ area on the basis of random sampling data.

CHAPTER-IV

4. DATA ANALYSIS AND PRESENTTION

4.1 Brief Introduction of Ilam District

In this chapter, an introduction of the Ilam district overall scenario of the study area (Tinjure Tea Farmer co-operative Association Ltd. Phakfok Ekatappa and Chamita .V.D.C. Ilam) Like geographic, demographic climatic, resources status and a brief descriptive on the tea cultivation on the organic base of the study area have been presented.

Ilam district is situated in south east face of Mahabharat hill. It is says the "Queen of hill" Ilam is a rich of culture and natural resources. It is famous for eight Aa they are Alaichi (cardamom) Aduwa (Genger) Alu (potato)' Amlisho (broom grass) Olan (milk Akabare (Chilly) Orthodore (Tea) and Atithi (Guest). Elevation of Ilam is 250 m to 3636 m from see level. It's border is east West Bangal India, west morang and panchthar Desricts, north-Panchthar and south Jhapa. The farming land of Ilam is 71085 hector. About 81% (229072) peoples are in agriculture sector.

Organic tea Farming promote and enhances biodiversity, biological cycles soil biological activity through management practices that restore maintain and enhance ecological harmony. The organic tea production system is different from conventional tea production. This proposal focused on the some management practice with respect to nutrient disease, pest and agro forestry and conversion period.

There is a great demand for Nepalese organic tea in Japan, and other Overseas Countries. Now for these purpose A.D.B., Tea sect, NTDC, HOTPA, of Nepal has also been playing a significant role in the context of tea development in Nepal. Tea plantation in Nepal also utilize the lands otherwise wasted for other agricultural cultivation.

Sources :

Chiyabari Darpan – karmachari bachat kosh D.D.C. Ilam
Ilamko Chinari – D.D.C. office Ilam
Krisibikash Karyacram and Upalabdhi –Agricultural Development Office Ilam.

4.2 Introduction of Study Area

This chapter brief discuss the general feature of this study area especially organic tea farming, management practices with respect to nutrient, disease, pest and

agro-forestry conversion period and compare the production and price of conventional (non-organic) tea and organic tea. This study area is related with "Tinjure Tea Farmers Co-operative Association (Phaphok Ilam) . It is situated in the western part of Ilam district and connected to Panchthar district southern part of Mahabharat hill.

4.2.1 Brief introduction of Tinjure Tea Farmers Co-operative Association

Established 2051/12/19 (B.C)

Working field : Ekatappa, Phakphok & Chamaita VDC of Ilam district Elevation :- From see level 1801 M. (Tenjure office)

Total area :- 84.24km^2

Border, East:- Mangalare, Sankhejung, Dhuseni, Powamajhuwa VDC.

West :- Amchoke, Phuyatappa VDC and Panchthar district

North :- Panchthar district

South :- Dhuseni, Gagurmukhe and LumdeVDC

- Landuse :-

  Farming area :39.59 km^2
  Forest :- 1314 ha.
  Rock, River 9.26 km^2
  Total 84.24 km^2
- Famous River : Dewmai, Phakphok, Tewa, Hoyangama.
- Climate : Tropical & sub tropical
- Temperature : Average maximum 20^0 c

  Average minimum 5.5^0 c and highly hills temperature might be less than 0^0 c
- Average rainfall : 2395 m.m.
- Population and other

  House No 3623
  Density of population :- 123.3 person/sq k.m.
  Population growth rate :- 1.78%
  Average family number :- 5
  Literacy rate :- male :- 67.1%
  female :- 52.3%
- Cast and language :- Bramhim, Chettri, Rai, Limbu, Gurung, Sherpa, Newar, Damai, Kami, Magar, Tamang
- Main Religion :- Hindu, Buddhist, Kirant
- Historical and cultural placeless :-
  a) Mahabharat hill
  b) Kuibhir, (Chamaita-7)
  c) Sablithumka Tourist center (Ekatappa-5)

d) Deumai River
e) Dharmadhuwar Gupha (Phakphok-3)
f) Tinchule Tourist view (Phakphok-5)
g) Dewmi pokhari (Chamaita-6)
h) Ratna kumar surung (Chamaita6)
i) Thamdanda Chamaita-6
j) Rupatar gupha (Ekatappa-9)
k) Ranke Historical Bazar

- Road :-Peach-(Mechi hiway)Rakse to Rake-12 Km

  Gravel-Ranke -Ravi Sadak -17 Km.
  Other Sadak-Village linkage sadak(Ekatappa,Chamaita, Phakphok) 38-Km.
- Market :- Ranke, Dewrali, Ghurpisepanchami,Chauribazar,Tinjurebazar, Phalatebazar, Dokandanda, Kolbotedanda, and Puranopanchami,
- Administrative and banking facilities:- Ilam district office, Branch office Mangalbare
- Tea expansion plan sector :- Mangalbare (Panitar)
- Total tea planted area :- 3860 Ropani with private company and small farmer
- Total member of TTFCAL :- 174. male 128, female 46
- Organic tea certified member 106 (Certified by NASAA)
- NASAA. Certification number :- 8024 SL1.

Consultancies Location :- Kanchenjunga Tea Estate located in the Panchthar area of Nepal. (GPO box 8821) Kathamandu Nepal.
Source: TTFCAL Profile

4.3 Study Analysis of Tea Cultivation in Nepal

The study is based on primary as well secondary data focusing of organic tea cultivation in this chapter and attempt has been made to describe about the current tea plantation production in Nepal, organic tea farming management & to find out the organic tea farming and it's role in environment.

The scientific name of tea is camellia saneness. There are saneness of tea

1. Camellia Saneness.
2. Camellia Assamica
3. Cassamica Lasiocalys

- Made Tea also Divided in to Three Parts

1. Black Tea (Fermented Tea)
2. Green Tea (Un fermented Tea)
3. Olang Tea (Semi fermented Tea)

- Black Tea also Divided in to Parts.

(a) **Orthodox Tea:-** Orthodox tea is left tea. It is flavor able and it has light color. The black tea produces in Hills namely Ilam, Panchthar, Dhankuta, Terathum, Sindhupalchook and other Hills area

(b) **CTC** :- CTC tea is dust tea. This tea is product in Tari in Jhapa District. CTC tea production in several Countries in the world. It is consumption in Internal market.

- **Green Tea** :- Green tea is said the un fermented tea. Green tea product and consumption in China, Japan and Taiwan. Now a days Ilam is a District where the Green tea is product in Nepal.
- **Olang Tea :-** Olang tea is said the semi fermented tea. This type of tea consume in Japan, China, and Taiwan.

4.3.1 Tea Production in Nepal

Histroically, the tea cultivation in Nepal was started in 1863. Before that period, people planted tea in their garden as a flower that means people have been growing a few bushes of tea for a long time. Harka Jung Thapa was the founder of tea in the eastern part of Nepal. He established two oldest tea gardens called Ilam and Soktim, But some say that Gaja Raj Sing Thapa was the first person to established these two tea gardens. The tea plantation is possible in Jhapa, Illam, Panchthar, Terhathum of Dhankuta districts of east Nepal. These districts are favorable for tea cultivation only Illam and jhapa districts of Mechi Zone have some significant achievements in the history of Nepalse tea industry, because they have most favorable condition for tea cultivation than the other two districts. These two districts which are isolated from the tea growing areas of Darjeeling the world's best quality tea producing district of India by the Mechi river. Ilam district lies in hill and Jhapa is located in the Terai. So Ilam district is able to produce the tea of a quality as high as that production in Darjeeling. Jhapa district can produce the high yielding Assam tea. Nepal has been producing black tea. There are two kinds of black tea i.e. orthodox tea and crush tear curl (CTC) tea. At a present the orthodox tea is produced in hill in the eastern part of Nepal, such as ilam, panchthar, Dhankuta, Terthum of CTC tea in Tarai i.e. in Jhapa.

4.3.2 Tea Production Sectors

There are three sector actively involved for the production of tea in Nepal. They are for the production of tea in Nepal. They are

a) Government sector
b) Private sector
c) Small farmers

NTDC (Nepal Tea Development Corporation) has been producing tea in Nepal at government sector. More than 70 private tea estates have been producing tea. Private tea estates are expanded in Jhapa, Ilam, Panchthar, Dhankuta and Morang. The third type of producers are farmers who depend on small farmer development project. The project is implemented in Ilam (Fikkal, Jasbire, Mangalbare) Panchthar (Lalikharka) Teharathum (Solma). After this step tea production is rapidly increasing in farmer scale.

Table No . 4.4.1

4.4.1 Tea Plantation and Production in Nepal (2010/2011)

S. N.	District	Garden		*Small Farmers*			Total	
		Plantation Area –ha.	Production K.G.	No. of Farmer	Plantation Area –ha.	Production K.G.	Plantation Area –ha.	Production K.G.
1	Jhapa	6198	1003601	954	2981	5191596	9179	15195197
2	Ilam	1380	531651	5839	4037	1187007	5417	1718658
3	Panchthar	391	94447	990	506	148049	897	242496
4	Dhankuta	240	54178	463	227	78944	467	133122
5	Terathum	40	6022	591	228	44011	268	50033
6	Others	1082	59491	686	141	38936	1223	98427
	Total	9331	1749390	9523	8120	6688543	17451	17437933

Sources : Tea Smarika (2068) N.T.C. D. B.

Table No. 4.4.1 sources that Tea plantation production in Nepla is Eastern part of the country Namely Mechi and Koshi zone recently Nowakot and parts of country have been tea is plating.

Table No. 4.4.2

4.4.2 Orthodox and CTC Tea Plantation Area and Production in Nepal

S. N.	Type	Orthodox		CTC		*Total*	
		Plantation Area –ha.	Production K.G.	Plantation Area –ha.	Production K.G.	Plantation Area –ha.	Production K.G.
1	Tea garden	3133	745789	6198	10003601	9331	10749390
2	Small farmer	5139	1496947	2981	5191596	8120	6688543
Total		8272	2242736	9179	15195197	17451	17437933

Note : No of Tea garden – 133, No of Tea Processing unit – 42

Source :

- District Agriculture Development office Ilam
- District Co-operative Association Ilam
- NTCDB (National Tea and coffee Development Board)

Table No. 4.4.2 shows that the tea garden and production area of Orthodox tea is hill side of the country and CTC tea production area is Tarai re

4.4.3 Co- operative Association Related with Tea

S.N.	Name	Address
1.	Small farmer co-operative Ltd.	Chandra Dangi , Jhapa
2.	Himchuli Tea Production co-operative Association Ltd	Bamti Ramechap
3	Mahanda Tea farmer Group	Prambung Panchthar
4.	Pahanglung small tea Farmer Group	Chilingdin , Panchthar
5	Taplejung Tea Production Processing co-operative Association L.td	Phidim Panchthar
6.	Agejung small farmer Group	Panchami -1, Panchthar
7	Agejung Adyour Small farmer Group	Subang -9 Panchthar
8	Teenjure Tea Farmer co-operative Association Ltd.	Phusrebhanjyang Phopok, Ilam
9	Balaguru Tea and coffee predictor co-operative Association Ltd.	Nayabazar Ilam
10	Purbeli Small Tea farmer Association	Fikkal Ilam
11	co-operative Tea Garden	Bawndangi -6, Jhapa
12	Singha Devi Tea producer co-operative Association Ltd.	Solma Terathum
13	High Hill Tea producer co-operative Association	Sakhejung, Ilam
14	High Hill Producer Group	Tamaphok – 8 Sankhuwasabha
15	Jiri Tea Development co-operative Association Ltd.	Jiri Dolakha
16	Small Farmer united Tea and coffee producer co-operative Association Ltd.	Bijulikot Ramechhap
17	Singha Devi Tea and coffee co-operative Association Ltd.	Okhaldhunga
18	Greel Hill Tea Producer co-operative Association Ltd.	Sakhejung Ilam
19	Ajmbare Tea producer co-operative Association Ltd.	Jeetpur -2 , Ilam
20	Singha Devi Tea producer co-operative Association	Mangalbare,-5 Ilam
21	Charkhola Tea producer co-operative Association Ltd.	Manglabare-3, Ilam
22	Small Tea farmer Group	Shantidanda-6, Ilam
23	Triyouga Tea producer co-operative Association Ltd.	Shantidanda-6, Ilam
24	Parakhopi Small farmer Tea farmer co-operative Association Ltd.	Parakhopi, Jhapa
25	Suva Tea farmer co-operative Association Ltd.	Jhapa
26	Mahendradhour co-operative	Machinagar Jhapa

	Association Ltd.	
27	Green Organic Tea producer co-operative Association Ltd.	Maipokhari-1, Ilam
28	Himshikhar Tea producer co-operative Association Ltd.	Panchakaniya -1, Ilam
29	Kanchan Himal Tea producer co-operative Association Ltd.	Kannyam -4, Ilam
30	Fikkal Tea producer co-operative Association Ltd.	Fikkal , Ilam
31	Ilameli Tea Producer co-operative Association Ltd.	Fikkal , Ilam
32	Deurali Tea producer co-operative Association Ltd.	Jeetpur-2, Ilam
33	Central Tea co-operative Association Ltd.	Ilam-2, Ilam
34	Siddhithumka Tea producer co-operative Association Ltd.	Siddhithumka, Ilam
35	Nawami Tea producer co-operative Association Ltd.	Jeetpur-4, Ilam
36	Guphathumki multi purpose co-operative Association Ltd.	Shantidanda-7, Ilam
37	Yangrupthum Tea co-operative Association Ltd.	Panchami-1, Panchthar
38	Himali Tea producer co-operative Association Ltd.	Subang -9 Panchthar
39	Lali Tea producer and processor co-operative Association Ltd.	Phidim -8, Panchthar
40	Chhhintapu Tea producer co-operative Association Ltd.	Nagin, Panchthar
41	Saselung Tea producer co-operative Association Ltd.	Yangnam, Panchthar
42	Satthumke Tea producer co-operative Association Ltd.	Yaktin, Panchthar
43	Phulbari Tea producer co-operative Association Ltd.	Sidin Panchthar
44	Janahit Tea producer co-operative Association Ltd.	Oyakjung, Terathum
45	Makalu Tea and coffee producer co-operative Association Ltd.	Tamaphok, Sankhuwasava
46	Kulkule Tea and coffee producer co-operative Association Ltd.	Okhe-8, Terathum
47	Makalu Tea producer co-operative Association Ltd.	Hile , Dhankuta
48	Ramche organic Tea producer co-operative Association Ltd.	Muga-7, Dhankuta

49	Rajarani Tea producer co-operative Association Ltd.	Rajarani-6, Dhankuta

Source : N.T.C.D.B., Tea – Coffee Smarika (2011)

4.5 Tea Expansion Plan in Nepal

There are seven tea expansion plan in Nepal

4.6 Tea Expansion Plan Mangalbare, Ilam

Established : 2040 / 41
Total area : 198-9-0-0 Ropani
Planted area : 192 Ropani

Name of V.D.C and total Tea planted area of Mangalbare Tea expansion sector

S.N.	*V.D.C*	*No. of farmer*	Plantated Area (Ropani)
1	Sakphara	2	34
2	Banjho	22	88
3	Ivhang	3	6
4	Lumde	20	198
5	Gajurmukhi	45	325
6	Fuyatappa	27	220
7	Amchook	121	805
8	Phakphok	127	1361
9	Ekatappa	32	1408
10	Chamita	110	1181
11	Mangalbare	187	2676
12	Shantidanda	203	3273
13	Jeetpur	141	2826
14	Dhuseni	11	35
15	Sakhajung	273	5524
16	Sowyak	7	53
17	Sangrumba	55	1075
18	Siddhithumka	69	884
	Total	1441	2900 (1045-ha)

Sours : NTCDB Tea-coffee Smarika (2010)

4.7 Tea Explain Plan Fikkal, Ilam

Established : 2035/36

Total area 40-3-3-0

Planted area 30 Ropani

Name of VDC and Planted area of Tea expansion plan Fikkal sector

S.N.	Name of VDC	*No. of farmer*	Planted area (Ropani)
1	Fikkal	425	11425
2	Namsaling	64	625
3	*Jogmai*	52	2250
4	Santipur	28	3275
5	Danabari	5	242
6	Chisapani	40	378
7	Kolbumg	86	1140
8	Irautar	10	150
9	Geirmale	48	560
10	Godak	100	870
11	Nayabazar	82	1150
12	Gorkhe	60	550
13	Panchakanya	148	1822
14	Samalbung	125	1500
15	Pashupatinagar	64	5118
16	Laxmipur	228	3841
47	Kanyam	462	6580
18	Shreeantu	267	4539
	Total	2594	44783 (2239 ha)

Sours : NTCDB Tea-coffee Smarika (2010)

4.8 Tea Expansion Pplan (Hile) Dhankuta

Established : 2040/41
Total area : 145 Ropani

Tea planted area : 107

Name of VDC and total Planted area of tea expansion plan of Hile Dhankuta

S.N.	*Name of VDC*	*No of farmer*	*Planted area*
1.	*Dhankuta municipality*	58	744
2.	Chunbang	26	320
3.	Belahara	49	208
4.	Pakharibash	40	380
5.	Muga	36	704
6.	Phalate	12	105
7.	Sanne	9	19
8.	Hattikharka	21	218
9.	Orkhale Jeetpur	28	134
10.	Murtidhunga	2	85
11.	Marekatare	15	35
12.	Dandagaun	8	68
13.	Parebadin	12	399
14	Tankhuwa	30	317
15.	Bhirgaun	26	116
16.	Bedetar	1	3
17.	Dandabazar	15	140
18.	Rajarani	41	102
19.	2nd Bahini Adda Hile		65
20.	Mude+Basantapur	29	74
21.	Pra. Sikhalaya Uterpani		100
Total		451	4445

Sours : NTCDB Tea-coffee Smarika (2010)

4.9 Tea Expansion Plan (Jasbire) Ilam

Established : 2042

Total area : 122 Ropani

Tea planted area : 80

Name of VDC and total Planted area tea expansion plan of Jasbire Ilam.

S.N.	Name of VDC	No of farmer	*Planted area*
1.	Ilam municipality	157	105
2.	Sumbek	70	580.5
3.	sulubung	118	768
4.	Maiphokhari	112	1105
5.	Barbote	60	542
6.	Puwamajhuwa	176	1098
7.	Maijhuwa	37	180
8.	mabu	15	950
9.	Jamuna	43	316
10.	Soyang	75	2376
11.	Payang	131	3500
Total		994	12360

Sours : NTCDB Tea-coffee Smarika (2010)

4.10 Tea Expansion Plan (Ranipauwa) Nuwakot

Estabilished ;- 2060/61

Total area;- 10 Ropani

Planted area;-9 ropani

Name of V. D C. name of farmer and planted area of tea expansion plan Ranipauwa Nuwakot

S.N.	Name of VDC	*No of farmer*	Planted area (Ropani)
1.	Kakani	9	286
2	Okharpauwa	5	10
3	Bungtang	14	67
4	Deurali	8	74
5	Kimtang	65	113
6	Salame	25	49
7	Valche	199	53
8	Sikkre	1	36
9	Barsnchet	2	6
10	Sunderadebi	2	16
11	Caule	2	2
	Total	421	704 (35 He)

Sours : NTCDB Tea-coffee Smarika (2010)

4.11 Tea Expansion Plan (Lalikharkha) Panchthar

Established : 2040

Total area : 166

Tea Planted area 65 Ropani

Name of VDC, Farmers name and planted area of lalikharka Tea expansion sector

S.N.	Name of VDC	*No. of farmers*	Planted area (Ropani)
1	Phaktep	42	538
2	Sarangdanda	68	1280
3	Ravi	20	280
4	Hanggum	24	28
5	Arubote	26	339
6	Kurumba	23	81
7	Siddin	20	218
8	Prambung	30	247
9	Subang	36	535
10	Panchami	44	382
11	Tharpu	27	606
12	Oyam	31	415
13	Yakteen	40	274
14	Bharapa	15	47
15	Nangin	61	268
16	Yangnam	68	867
17	Phidim	49	216
18	Lungruppa	19	186
19	Ranitar	60	888
20	Nawomidanda	10	65
21	Olene	60	227
22	Mauwa	24	40
23	Chilingdin	69	715
24	Angsarang	24	255
25	Yashok	6	56
26	Memeng	28	133
27	Imbung	15	120
28	Pauwasartap	22	284
29	Chookmagu	6	70
30	Nagi	9	67
	Total	986	9929 (496.5) He

Sours : NTCDB Tea-coffee Smarika (2010)

4.12 Tea Expansion Plan (Solma Terathum)

Established : 2041 Chahitra

Total : 173 Ropani

Planted area : 126

Name of VDC, farmers and planted area of Tea explain plan (Solma) Terathum

S.N.	Name of VDC	*No. of farmer*	Planted area (Ropani)
1	Solma	151	974
2	Sungram	33	251
3	Mangalung	14	102
4	Jurikmmti	31	201
5	Ambung	14	35
6	Morahang	4	132
7	Sreejung	8	112
8	Pouthak	3	67
9	Oyakjung	22	43
10	Phakchamara	8	106
11	Hamarjung	20	99
12	Akhe	13	79
13	Angdhim	16	214
14	Sueup	42	500
15	Dagapa	9	36
16	Phulek	21	178
17	Basantpur	50	304
18	Panchakamya	1	10
19	Samkhuwasabha	120	1041
	Total	579	4457 (223 He)

Sours : NTCDB Tea-coffee Smarika (2010)

4.13 Area Under Organic Tea Cultivation in India

Regular Organic Tea production Under conversion to Organic production

Table No.-13

Location	No of garden	Area Ha	No of Garden	Area Ha.
Darjeeling	17	2775	5	1514
Assam	7	416	3	562
Southindia	5	481	4	775
MW.India	1	558	1	260
Total		4221		4841

Sours : NTCDB Tea-coffee Smarika (2010)

The table 4.13 clarity that maximum organic tea produced garden are hill area in Darjeeling and less produced area are other parts in India.

4.14 Extent of Tea Area Certified as Organic and In Conversion World Wed (December 2008)

Organic Tea Certified Countries

Table No.-4.14

Region	Organic tea area in ha.	In conversion tea area in ha.
India/ Srilanka	4300	3040
China	1940	1009
Other Countries	1025	540
Total	7265	4589

The table No 4.14 clarity that maximum organic and non organic tea produced areas in South Asia than the other countries of the world.

4.15 Percentage of Cost of Operation per ha. and Quality Inputs for Three Years Before and After Conversion to Organic Farming in Tea.

Comparison Between Organic and Non-organic Tea

Table No.-4.15

Operation inputs	Pre conversion (conventional)			In conversion (Organic)		
Trenching					100	2
Fertilizer	92.2	7.9	84	97.8	2.2	98.9
Fungicide	74.5	25.5	2			
Insecticide	67.9	32.1	2			
Weed control	23.4	76.6	12		100	7
Shade					100	1

Sours : Field survey (2012)

The table No 4.15 clearly shows that non organic tea planted area have been used to a lot of chemical and non organic tea planted area have not used chemical, but organic sector too much need weed control and shade.

4.16 Quantitative Input for Pre Conversion and Conversion to Organic Periods (per ha.)

Use of chemical fertilizer in non-organic

Table No.-4.16

Input	3 years conversion	1-3 years conversion	
		Input	
Urea	1174kg	Neem cake	3750kg
SOA	900kg.	Castor cake	10000kg.
Rockphos	1050kg.	Rock phos	1050kg.
Lime	2000kg.	Compost	20000kg.
Gramoxone	151kg.	Lime	2000kg.

24D	500ml		
Ethion	500ml		

Sours : Ganguly P.K (2000) The Assam review and tea news.

Table No. 4.16 shows that chemical fertilizer is use a lot of in non organic but it is not necessary for organic instead of chemical fertilizer it is need to vermin compost and mulching for organic.

4.17 The Price Difference Between Organic and Non-organic Tea (price per kg. made tea) in India

Price Difference Between Organic and Non-organic Tea

Table No.-4.17

Year 2000	Non-Organic	Organic	Price increase over non organic tea.
Darjeeling	150	300	100%
Assam	95	150	57.8%
South India	65	120	85%

Sours : Ganguly P.K (2000) The Assam review and tea news.

Compare the price between organic and non-organic tea

Fig No.4.17

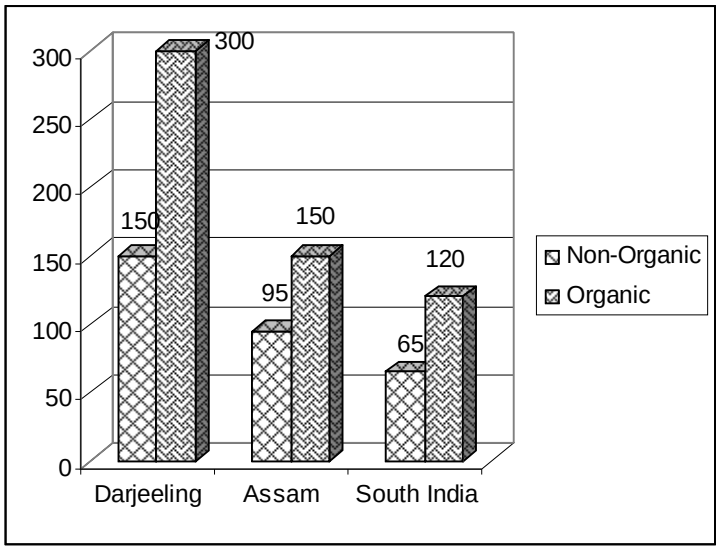


Table No. 4.17 (Fig No.4.17) declared that it is large different price between non organic and organic tea in India. The tea of Darjeeling is highest value then other areas tea

4.18 Effect of Organic Manures on Yield (1993 to 1995)

Table No.-4.18

Manures	Yield			
	1993	1994	1995	Mean
Concentrated organic manure (IOM) per 3 ha.	1442	2263	2292	1999
Organic manure (FMY) per 10ha.	1413	2047	2172	1877
Green manure	1366	1040	2204	1870
Conventional fertilizer (NPK) 30;40;130 kg. per ha.	1366	2040	2204	1870
CD at 5%	104	70	83	53
CV %	7.04	4.88	5.34	3.56

Sours : Gangly P.K (2000) The Assam review and tea news.

Table No. 4.18 It shows that the effect of organic manures on yield up to 3 years.

4.19 Effect of Organic Manures on Soil and Leaf Nutrient Status (mean of 3 years).

Manures on Soil and Leaf

Table No.-4.19

Treatment	Soil N (PPM)				Leaf			
	Organic	Ammon	Nitrate	Phosphorus	Potassium	Sulfur	PH	Nitrogen %

	C%	ium		pent oxide	oxide (PPM)	(PPM)		
Concentrated organic manure (IOM) per 3 ha.	0.90	12	31	42	79	28	4.47	4.89
Organic manure (FMY)10 per/ ha.	0.98	11	36	28	74	25	4.47	4.81
Green manure (mulch) 10/ha.	0.94	10	36	34	63	26	4.46	4.60
Conventional fertilizer (NPK) 130;40;130/ha.	0.91	12	27	40	83	25	4.47	4.88

Sours : Ganguly P.K (2000) The Assam review and tea news.

Table No. 4.19 shows that the effect of organic manures on soil and leaf nutrient stats up to means of three years treatment. with concentrated organic and fertilizer and manure.

4.20 Soil Fertilizer at the in of the Third Years

Soil Fertilizer

Table No.-4.20

Treatment	Organic C%	Phosphorus pent oxide	Potassium oxide	Sulfur (PPM)	PH
Concentrated organic manure 3/ha.	0.82	27	53	34	4.51
Organic manure 10/ha.	0.76	28	47	32	4.53
Green manure (mulch) 10/ ha.	0.81	18	40	34	4.55
Conventional fertilizer (NPK) 130;40;130 kg/ha.	0.64	20	123	28	4.53

Sours : Ganguly P.K (2000) The Assam review and tea news.

Table No. 4.20 shows that the soil fertilizer and treatment at the end of 3rd year besed on organic and conventional fertilizer (NPK) kg/ha.

4.21 Compare the Production and Price

Conventional tea and organic tea of Tinjure Tea Farmer Co operative Association since 20 years.

Price and Production of TTFCAL

Table No.-4.21

Years	Production	Price/kg	p. Area (Ro)
045-050	0	0	1350
050-055	7500kg	10	2200
055-060	65000	30	2825
060-065	115000	25	3775
065-070	180000	35	3875

Source: Field survey (2012)

Price and Production of TTFCAL Left Tea

Figure No. -4.21.1

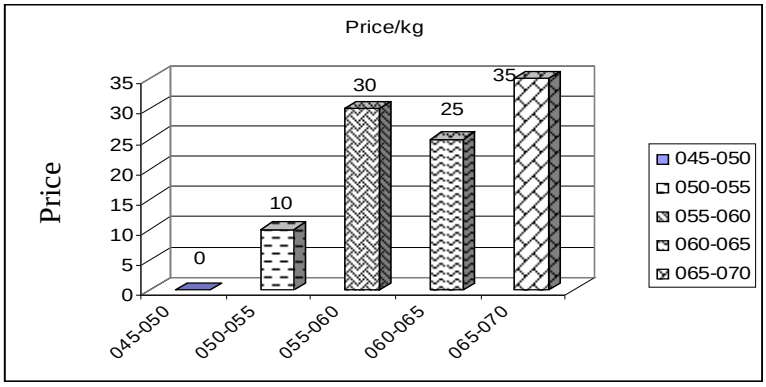
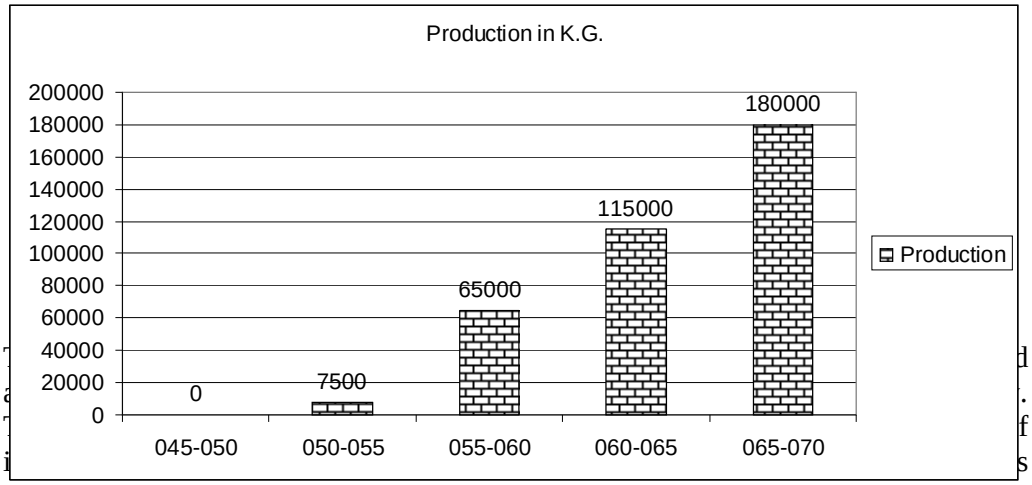


Figure No. -4.21.2
Production of TTFCAL Green tea



garden and production cost.

Production Diagram of Organic Tea production in Tinjure Tea Farmer Co-operative Association (Since 20 Years)

Table No. 4.22

Average Price Organic VS Conventional Tea of Nepal : 2010

Average Price Organic and Non-organic Tea in Nepal

particulars	Organic	Conventional
Average grades	Rs. 452 /kg	Rs. 250 /kg
Green Leaf	Rs. 25 /kg	Rs. 18 /kg

Source: NTCDB (2010)

Fig No. 4.22

Average Price Organic and Non-organic Tea

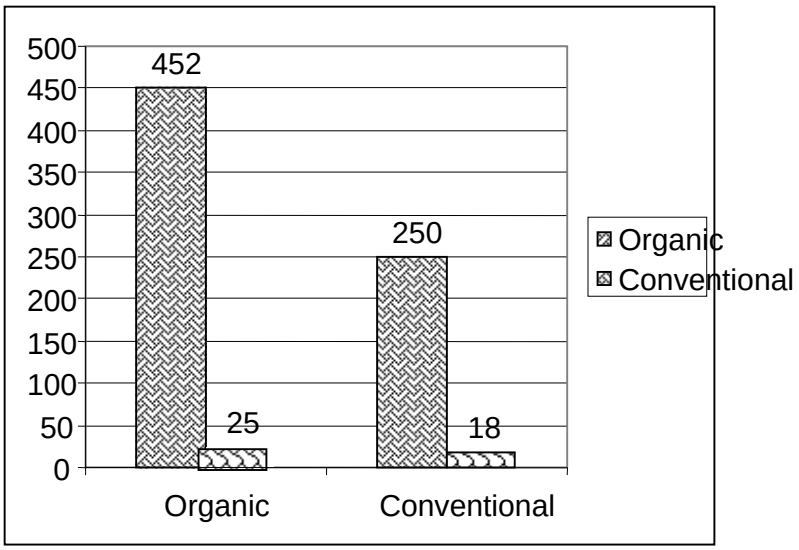


Table No. 4.22 (Fig no 4.22) shows that the average price of organic tea (Made tea and green leaf) is higher than the conventional tea.

4.23 Challenges on Organic tea Cultivation

There are many kind of challenges holds the organic tea cultivation in Tinjure Tea Farmer Co-operative Association Ltd. Phakphok (Ilam) Nepal.

4.23.1 Challenges Certification and Cost

For the certification it is necessary to invest a lot of money but the cost have not resalable of organic tea in local market. It have difficulties to get organic certificate.

4.23.2 Challenges no Scientific Backup

The scientific backup are as follows which are challenges for organic tea cultivation.

i) Composting
ii) Pest management
iii) Quality testing
iv) Clone development

4.23.3 Challenges in Marketing

Nepal have no own international market, as a whole agriculture production of Nepal is depended on Indian auction market. Thus the organic tea also depended on Indian market.

4.23.4 Challenges in Finance

The finance company could not gives any financial support to organic farm. The company should be given micro-credit to small farmers. The processing unit did not gives any incentive and bonus to producers.

4.24 Activities of TTFCAL

Tenjure Tea Farmers Co-operative Association Ltd was established 2051/12/19th The founder chairman was Mr. Ritukanta Khanal. After established the association bought 40 Ropani land and construction a TTFCAL office. It helps to market green leaf. Since 2056 TTFCAL buy the green leaf of its own area and sells to Small Farmer Tea Producer Doctor Khola Fikkal until 5 years. TTFCAL have done hard struggles to got organic COC and get organic certificate through the kanchanjunga Tea Estate Panchter now a days TTFCAL sells the green leaf to kanchanjunga Tea Estate Phidim Panchthar. With the help of Commercial Agriculture Alliance TTFCAL have been constructed gravel road 5Km.(Deurali to Tinjure) The annual conference of 2068 TTFCAL has start a medium tea factory.

Now the co-operative Association is going to take an organic certificate from NASAA or JAS.But TTFCAL need a financial support to get the organic certificate for the progress of farmer who are related with Tinjure Tea Farmer Co-operative Association.

Related farmers of Tinjure Tea Farmers Co-operative Association Phakfok-6 (Fusre Bhanjung), Ilam, The farmers are co-related with code of conduct in organic tea production by NASSA. There are 106 organic tea growers in TTFCL. Among them 45 members are female and 61 male.

Sources: TTFCAL office report

5.3 Prospect, Challenges and Opportunity of Organic Tea Production in Nepal

Definition

Tea qualifies as Organic only when active use of environment friendly techniques are adopted and approved by Inspection authority.

- World tea Scenario Production : 2004

Conventional	Organic
India : 820000 tons	3500 tons
China : 83000 tons	8000-10000
Srilanka : 288000 tons	NA
World : 3200000 tons	

Source : *FAO Website*

- Research findings on Productivity of Organic Tea

Manures	Un pruning Section
Concentrated organic 3 tons/Ha	2292 kg
Organic Manure (FYM) @ 10 tons/Ha	2172 kg
Green manure (Mulch) @ 10 tons/Ha	2204 kgs
Conventional Fertilizer NPK 130:40:130 kg/Ha	2308 kgs

Source by : TRA Johrat

- Price differences Organic VS Conventional 2000/2001

Darjeeling	100% (Higher)
South India	85%
Sri lanka	300%
Green leaf	233%
China	50%

- The Average Tea Production in Darjeeling 576 kg per ha.
- Makaibari Tea Estate (Organic Garden) Claims 15% above the average.
- Tea Production in Nepal 2010 Black/Green
- Production

Total Production	11.61 m. kg (1.55m.kg orthodox)	
Plantation Area	16385 Ha. (6689 ha Orthodox)	
Share of Small holders	70%	
No of small holders	6942	6093 Hills
No of factory	23	14 (Orthodox)

- Organic Tea in Nepal (Certified Area.)

Tea garden	395 Ha.
Small holders (386 farmers)	262 Ha.
Total area	736 Ha.
Under Process (COC)	103 Ha.

- Organic Tea Production and Productivity in Nepal : 2011 (Black/Green)

Production	Productivity
Kanchanjangha T.E. 28000kg	561.5 p/h
Guanse T.E. 30000 kg	-young tea
Small holders (Kolbung, Sumbek, Manglebare Tenjure Ilam)	658 p/h

Total Production 58000kg

4.15 Employment & Benefited form TTFCAL Area

Tinjure Tea Farmer Co-operative Association established the objectives of tea expansion in it's own area (Chamaita, Ekatappa, & Phakphok) did not helps the economic progress of far growers, food crops is only food maintained & seasonal work. About flour month only farmer engage in the food crops agriculture. It does not gave good production. Behind it have so many constrains problems. with the footropes, cash crops is a backbones of economic pallor farmer in TTFCAL areas. There are many kinds cash crops in Ilam. Among them tea is the best cash crops in it's area. The cultivation have following benefited in TTFCAL area.

4.15.1 Green leaf tea buying and selling by TTFCAL form 2069 Charitra to Ashad

Table No.4.15
Green leaf tea buying and selling by TTFCAL

S.N	Month	Buying			Selling		
		K.g	R.s	Total	kg.	Rs	Total
1	Chaittra	15176	48	728448	15176	50	758800
2	Baishak	10589	48	508272	10589	50	529450
3	Jestha	11600	48	556800	11600	50	580000

4	Ashad	9500	48	456000	9500	50	475000
	Total	46865		2249520	46865		2343250

Table No. 4.15 shows that Green leaf of tea is buying Rs. 2249520 and selling cost is 2343250 and its different cost is Rs. 94730. TTFCAL maintain office work and manpower with it.

i) Employment opportunities

following no of workers are engage in tea sector in TTFCAL area.

Table No. 14

V.D.C	No of house	Annual income	compare with food crops
Ekatappa	339	3034000	150%
Phakphok	244	3440000	200%
Chamaita	282	2392000	115%

Sources : TTFCAL office report and field survey

Table No. 14 shows that the employment of study areas people and annual income of them, higher than the farmer who were engage in food crops and other jobs.

Employment opportunity created by the tea cultivation. Tea gradient has generated employment opportunities many people are involved in this area more then 90% workers are involving permanently. In the plucking season more then two hundred people get seasonal employment. At the time especially plucking helped the workers to be self depend development. In season more then 200 temporary workers, which is mostly fulfilled from local people and labours family. And by providing employment to the local people the garden has helped to check the act migration problem in some extent.

Now a days TTFCAL has started a tea Industry it will payed an important role in providing employment opportunity for local people and to solve the unemployment and migration problem to some extent.

CHAPTER-V

5.1 Concept in Organic Tea Cultivation

Tea plantation in Darjeeling had started something in 1850's is a trial and commercially in 1852 by the British. Since then up to 1960's Tea farming was more or less organically practiced and gained popularity at E.E.C. Countries for its excellent aroma which could not be produced in any other part of the globe because of its typical climate and soil. Character under favorable and healthy green environment. But unfortunately Darjeeling planters introduced the method of tea farming by applying synthetic fertilizers, plant protection chemicals and weedicides some times in sixties in almost all 86 running tea gardens covering approx 20000 hectors of land to bring down the production cost of tea. The result in terms of productions.

Table No. 5.1

Data of organic Tea in India

Years	Production
70s to 80s	10 to 12 M kegs
80s to 90s	12 to 45.5 M kegs.
90 to 99	14.5 to 9.3 M kegs.

Sours : Ganguly P.K (2000) The Assam review and tea news.

Table No.15 shows that the organic tea production up to 3o years and India, above dates deals the production of organic tea is increasing after 20 years of organic process.

Tea estate gradually underwent changes and most of them have become environmentally barren. These transformations where the result of following the philosophy of short-term gains. However, what could be done now to alter this situation? How this heritage of the Queen of Hill could be saved? Answer is readily available for a long term sustainability take the route of 'Organic farming'. Out of 78 tea gardens in Darjeeling organic cultivation is catching up fast and almost 12 to 14 Estates have already converted to organic Pussimbing Tea State is one of the states which has successfully adopted organic cultivation along with its sister gardens name Chamong tea estate and Tumsong tea estate. Organic farming is cynically referred to as the province of the fanatic.

The Pussimbing tea estate is near Ghoom Railway station in Darjeeling Hills cut an altitude between 4500 ft. to 6500ft above mean sea level. This estate enjoys the advantage of having tea cultivation at the highest elevation in Darjeeling.

Organic farming is based on the following principal objectives.

1. To produce sufficient quantity of food of high nutritional value.
2. To interact in a constructive and life in chancing way with all natural system and cycles.
3. To encourage the formation of biological cycles within the farming system involving micro- Organism, soil flora and fauna.
4. To increase long term fertility of soil.

5. To use as for as practicable renewable resources in locally organized agricultural system.
6. To work as for as possible in a closed system with regard to organic matter and nutrient elements.
7. To provide ideal living condition to all live stock.
8. TO minimize all sorts of pollution that may result from chemical based agricultural practice.
9. To maintain genetic diversity of the agricultural system and its surroundings, including the protection of plant and wildlife habitats.
10. To consider the wider social and ecological impact of the farming system.
11. To respect natural ecological balance and avoid synthetic fertilizers pesticides weedicides etc. and to avoid forcing of plant/ Animal growth by industrial method of livestock management.
12. To provide safe working environment.
13. Low input sustainable agriculture (LISA).
14. Compromise where compromise is inevitable due to ecological or economical conditions in which we judiciously be followed. Fundamental requirements for growing and maintaining tea plantations are

a) Soil treatment,
b) Control of pests / fungal diseases
c) Control of weeds

Research is in progress to find out 'Organic solution to maintain soil nutrient, status and also to keep the pests and diseases under control based on the a foretasted principles'. However the following methods are being tried out for introducing organic practices.

5.1.1 Soil treatment

Soil treatment is based on the principle of avoidance of inorganic (synthetic) nutrients. Composting and production of organic manure sustained agriculture in the past. This ensures quality and safety of agricultural products. The method of preparation of a compost help by raising a rectangular bamboo frame of 4'×4'×6' 0r 8' dimension and filling it with at least 4" layer of the following matter.

a) 1000 kegs of screened soil (virgin)
b) 1000 kegs of leaves/ plants/agro waste
c) 80-100 kegs of raw cow dung
d) 800-100 liter of water
e) 2 nos. polythene sheet (to use on the floor and top of the seap)

One such tank can produce 8-10 m. tons of compost/year depending on climatic condition in Nepal. For green crop and shrubs eupatorium glandeelesum a rich source of NPK grows abundantly in Nepal hills and plains can be used. A layer layear 4" virgin soil followed by green matter of 4" layer and then cow dung to be repeated till the frame is completely filled and water to be sprayed on it. Final layer on top to be of soil to prevent evaporation of volatile compound and maintain temperature inside the heap. Decomposition of such raw materials takes place within

4 months depending on temperature and humidity. One tone of compost/hectare will help improve soil texture and structure. It will also improve soil qualities which will enable the soil to retain nutrients and moisture. When sufficient compost manure is not available oil cakes particularity castor. Doc, Neem, Cake, Paraskhol, Kusum Cakes, etc. can be applied. 1 ton / hector. Tobacco waste can be used to increase potash status in the soil. In any pruned tea sections where the soil is exposed, the pruned litters could be chopped and use as much along with Guatemala citronella leaf or green crop available locally in the area. In addition leguminous plants such as Crotolaria, Bagamudola, Daincha, Priotroples etc. can be planted within the tea sections in rows. These plants in addiction to fix in nitrogen into the soil, also act as additional organic manure and stop erosion of soil to a great extent, similarly Erythrina/Cristagoli, a leguminous tree can be planted as a spacing of 20' × 20' Allizzia Chinensis or any other shade tree in plantations will provide plenty of leaf litter which will improve soil quality and stop landslides to some extent . Guatemala grass can be grown in vacant areas within the plantations in areas from where the plants are uprooted. This will facilitate rehabilitation of soil. Leaves of the plant can be used for compost. Leguminous plants like sweet clover can be tried as cover crop 250 grams of seeds of this plant is needed to cover a hectare of plantation, it is estimated that these plants fix 1.7% - 1.9% nitrogen/hector. Sesbania and Beans might be among the crops that could be grown within the plantation to fix more nitrogen from atmosphere and enrich soil. Neem cake, if supplemented can effectively be utilized to control soil borne insects and pests.

5.1.2 Pest Control

Organic Techniques

This is one area in organic farming where the possibility of crop loss takes place at a higher percentage if one cannot investigate the life cycle of the pests, mainly trips Greenflies, Helopetis, and Red spider. Following plants available in Nepal hills and plains provide for the much needed organic substances to keep pests under control.

1) Armies Vulgarism
2) Ageratum Conyzoldes
3) Polygonal spp
4) Equisetum Arveense
5) Lycopodium Claratum (club moss)
6) Cleandendrum inerml
7) Crysenthimum
8) Marygold
9) Citronella grass
10) Azadirachta

These plants have medicinal ingredients and are effective in controlling pests and diseases. Azadirachta though not growing in high altitude can easily be collected from Terai and valley. Approx 40 kgs of green matter of the plants mentioned above after grinding is soaked in a water tank of 100 liters for 12 hrs. The extract of the plant may be squeezed out 2 or 4 liters of the extract could be diluted with 200 liters of water and sprayed on the plants infested with pests. This extract has repellent properties and hence prevents green aeration of pests. Azadirachta is another source

of organic pest repellent which may be grown in the estate. The beneficial aspects of the plant.

a) Maximum availability of kernel which can be utilized to control pests, insects at minimum cost.

b) Creating a forestation and

c) Availability of abundant mulch material. Similarly citronella can be planted all along the footpath within the plantation for availability of sufficient green materials within existing land. This can be planted as thick hedge in rows particularly in hills to prevent landslides.

5.1.3 Another method of preparation

The aforementioned plants have to be dried at 55^0 c temperature and grinded. Filter the grinded material through mesh no 50 .Repeat this process to avail maximum percentage of such grinded powder of the dried plants. 500 grams of such powder to be soaked in 12 to 24 hours, filter the solution. This solution to be mixed with 400 liters of water to cover one hectare of planted area. The advantage of this method is such powder can be stored for one year in airtight condition and can be used at any time of the year.

5.1.4 Fungal Diseases

Blister blight and redspot are the major fungal diseases infesting tea plants. A few experiments conducted in this garden using Marigold leaves have given highly promising results. Marigold flower has more potential then leaves and can be stored as mentioned above. Studies are on to see the comparative result. Raw cow dung water also controls this diseases and still under trial to find out the extent of effect.

5.1.5 Binding Agent

As one is forbidden to use any synthetic binding agent under organic farming it is to be ensured through alternative means that the sprayed substances cling on the plants. This is necessary particularly during rains. Ferns can be used as binding agent since the plants have resins which is a combination of hydrocarbons and lipids. Further it may be mentioned besides controlling pests and diseases, the flavor of tea leaves could be improved also by this procedure as Trepanned is another important constituent present in Fern. Lycopodium clavatum has also been spotted in Nepal. This plant contains 6% Nicotine and sulphur which can take care of pest and mites and can be substituted for synthetic sulphur.

5.1.6 Growth Promoter

Banana leaf extract can be applied as micro nutrient. This extract has the following nutrients.

i) K_2O = 3.35%
ii) Zn=20 PPM.
iii) Mg = 0.2%

iv) M_n = 30.4 PPM
v) Bo = 16 PPM

Most importantly the Fibre of this plant after extraction of juice can be used as mulch or for compost. Already the trial has been taken in Pussimbing and excellent result has achieved.

Since the conversion of Pussimbing estate into organic cultivation during 1993. The quality of tea has substantially improved in terms of its organoleptic properties and grades.

5.1.7 Constraints

Since the concept of organic farming of tea is relatively new and uncommon hardly a well -equipped laboratory or guideline from scientists is available in ascertaining the doses of afore said plans according to their properties. So far doses are applied only to avoid wastage in the line with the 'Bio-Tech' method as "Effective microbe" (EM) introduced by the university of Ryukyu in Okinawa Japan in 1989 under APNAN (Asia Pacific Natural Agricultural Network). The object was to create an ideal soil Microbiological environment by encouraging. The propagation of microbial population which will help in raising the production quantitatively as well as qualitatively. DTRC Kurseong under Tea Board can be of much help if it agrees to undertake necessary up gradation to help the cause of organic farming of tea.

5.1.8 Why Go Far Organic?

Is it that the plantation is sick and therefore needed to go for organic? The answer is No. The necessity of going for organic is in fact connected with marinating a healthy environment for next generation. This is high time that the planters should decide whether they will follow the process of chemical or artificial farming practice and invite inevitable environmental disaster or obey the organic way to sustain everlasting prosperity.

5.1.9 Advantage of Organic Tea Farming.

1) The market for organic tea growing quickly.
2) Price for organic tea is generally higher than those for conventional teas. Consumers are willing to pay more for a safer product.
3) Competition will be reduce due to limited organic certified tea farm as compare to conventional.
4) Pest management would not be too difficult because insects can be control by natural enemies and good management practices e.g. Thrips and Qphids control by ladybug beetles.
5) We can get quality of product without any healthy hazard by agro-chemical.
6) We don't need to use sophisticated techniques because organic farming always encourages local resources.
7) Organic tea farms supply the energy through shade tree and hedgerow because the wood and Brach of shade tree can use far dry and withering process.

5.2 Organic Tea Cultivation

5.2.1 Nursery Management

Tea nursery is the first step of tea cultivation , so that following steps are follows for nursery management.

a) Site selection ;- Nursery site must have been selected near the planting area, available of water sources ,and bright face of land.

b) Soil:- Soil is necessary the mixture of soil sand .Every one cubic meter soil is need 5 kg vermin compost to develop the cutting colon and mineral also mixed with soil (0.8-I)%

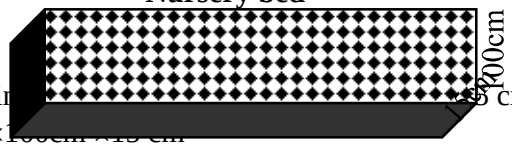
c) Soil acidity:- For the tea nursery acidity of soil must have been (4.5%_5%).If acidity is more then 5% it is necessary 2% zink salphet (2 kg mixture in to 100 liter water) spray in 2 to 3 times. If the acidity have less than 4.5% in soil the agriculture lien must be used 50 k.g/Ropani, tea nursery is better thus soil with more acidity than 5.5%

d) Eel worm :- Worm is harmful for every plants for the tea nursery it is necessary to soil test if less than 4 worm in every log soil, it is useable soil for nursery.

e) Preparation of rooting sieve nursery bed:- Cutting tea have been convert to plant in to two way. One method is use polythene tube and another method is on land. Both of above nursery bed necessary organic compost. for tea nursery the bed must be the following diagram.

Figure No. 5.2.1

Nursery bed



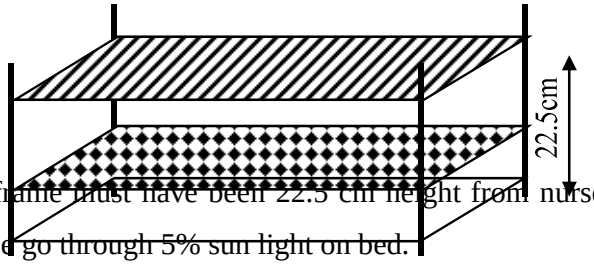
length is accordi cm.

nursery bed =L×

f) Shade :- In the nursery shade manly use Bamboo lath frame or thatch which is the based figure no. 5.

Figure No. 5.2.2

Shade



The lath frame must have been 22.5 cm height from nursery bed. From the lath frame must be go through 5% sun light on bed.

g) Aspect of nursery bed and cutting Both overhead thatch shade with sloping roof must be east-west and low bamboo lath frame shade must have been North-south the planted colonel cutting use to plantation face of leaf must be west and north respectably of above shade. The temperature is better 25^0c-30^0c. In the hill area the nursery will be ready 18 to 24 month. The mature

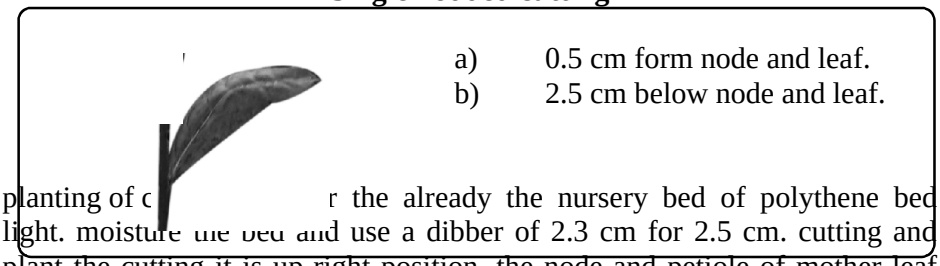
plant of tea is height of plant 40-45 cm. Number of leaf 16-19 cm. Steam of plant 0.5-0.8 cm.

Figure No. 5.2.3
Tea plant

h) Type and preparation of cutting there are three types are cutting
   i) Single mode cutting.
   ii) Double mode cutting.
   iii) Multi modal cutting.

Multi nodal cutting is better for bush frame and single node cutting is better for more tips

Figure No. 5.2.4
Single nodded cutting



i) planting of c r the already the nursery bed of polythene bed light. moisture the bed and use a dibber of 2.3 cm for 2.5 cm. cutting and plant the cutting it is up-right position, the node and petiole of mother leaf must be above from bed surface. The raw and column of distance must be cutting 5×5 cm

j) Soil moisture temperature and humidity :- Bhadra to Manshir months are good month for cutting nursery. Less then 15^0cor 90% humidity is not good for cutting so that polythene tent is better for callus formation and root initiation of cutting.

k) Transplantation into sleeves from nursery bed :- After 3 month transplantation the cutting from nursery bed to polythene bag.

l) Manures and fertilizer application :- Manures and fertilizer application are two ways.

   a) Soil application :- After growing 3-4 leaf of nursery the ratio of N:P:K = 2:1:2 is use to compost or vermin compost.

b) Foliar application :- After growing 6-8 no. of leaf this methods will be applied. This method is good the relative humidity and day temperature need 90% and 20^{o}c respectively Autumn spring, season are better for this method.

m) Storage of Cutting :- After two month of cutting the cutting clone gives thin layer of callus it can sealed polythene sleeves. It's viability retain is 10 days.

5.2.2 Estimated inputs Required for One Lakh Clonal Nursery Establishment

a) Nursery Area

Total area of nursery :- $120 \times 1200 cm^2 = 14.4\ m^2$

Number of bed/Ropani :- 18.45=18

Polythene sleeves ($17.5 \times 20\ cm^2$) Number/bed :- 1478=1478×18=26604

b) Soil for polythene sleeves

Soil every sleeves 2.5 k.g.

Soil every lakh sleeves :- 250000 kg=250m.tons

Plote :- 2 Ropani

c) Material for 4 Ropani nursery area

Bambool :- 500 pice (125/Ropani)

Bamboo for tent :- 1200(length-7m)

For thatch :- 2000 (Porter)

Rope :- 20 kg (5 kg/ Ropani)

d) Mother bush average cutting number 250

for 100000 cutting - $\frac{100000}{250} = 400$

e) Manpower 140/ ropani

f) Chemical (Neem based insecticide) 0.625/litter every Ropani=2.5 litter

copper based fangicide :- 0.5kg/ Ropani = 2 k.g

Vermin compost :- 50 k.g

Zincsulphate :- 3 kg

Compost :- 62500 kg

Irrigation :- As for need.

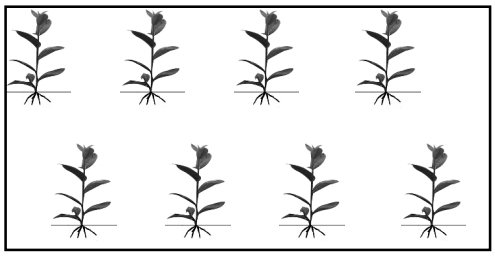
5.2.3 Planting Density Number

It is not fixed number of plant, But average number of planting density determinant.

a) Single haze :- Now a days single haze planting style is famous. It is single line, every one line and other lines, distance and wide are same.

Figure No. 5.2.3.1

Single haze



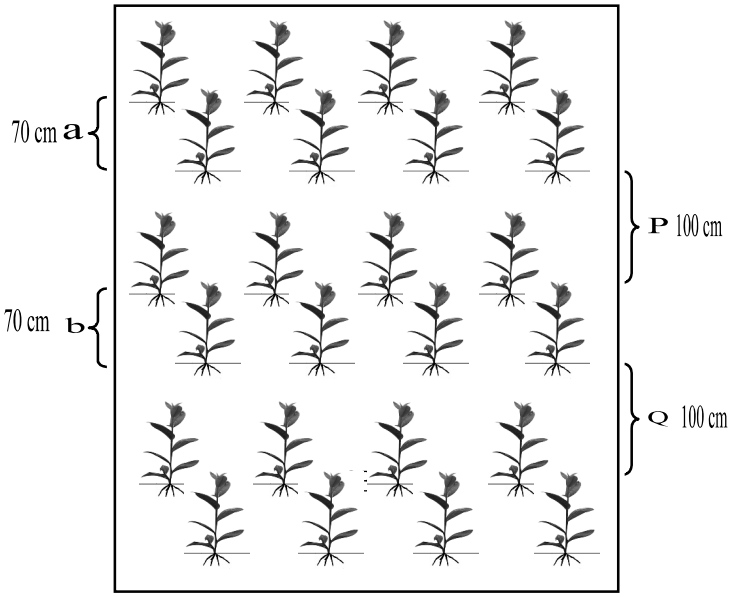
Column-100 cm

raw-60 cm

b) Doable haze tea plantation :- After two line of tea bushes the distance of lines are equal is called doable haze tea plantation

Figure No. 5.2.3.2

Doable haze



Above figure determined distance of (a=b=c) are equal each other and the distance between P&Q are equal each other.

5.2.4 Factors Affecting the Spacing Decision

a) Soil :- If the soil is not better it is need more plants.

b) Frame :- Small frame of plant determined more plants.

c) Compact bush frame determined more plants. (800/Ropani)

d) If the bush frame is flat, it determined 700 plats/ Ropani

5.2.5 Plant Population in Per Unit Area

Distance (c.m)	system (planting)	No. of plant/ha	plant No. of/Ropani
100×60	single haze	16666	847
105 ×60	"	15873	807
105×70	"	13605	691
110×60	"	15161	770
105×75×75	doubles haze	14814	753
105 ×70 ×60	doubles haze	17316	880
110×70×70	doubles haze	15873	807
110×70×60	"	16806	854
110×75×75	"	14414	732
110×75×70	"	14815	753
110×70×65	"	16326	830
110×75×65	"	14238	774

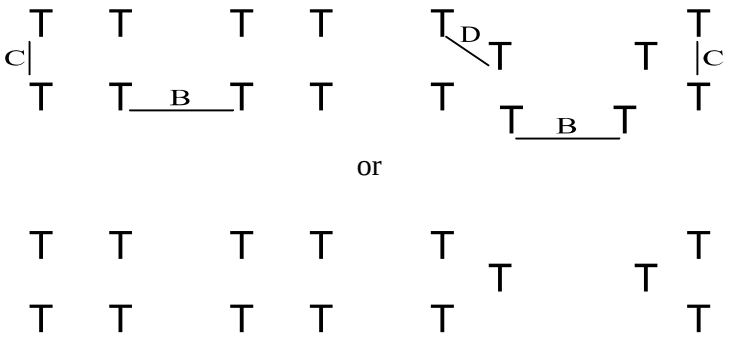
Source: Field visit (2012)

Total plating area covered 5% by drain way so that the above deals is less then 5% i.e. plant number is 14000-17000/he 700-850/Ropaniis better to tea plantation.

5.2.6 General Formula for Calculating Plant Population/Ropani

Figure No. 5.2.6.1

Formula for Plant Population



or

A= Every haze line number

B= Distance between one haze to another

C= Distance between one plant to another (C.M)

D= Distance between one line to another (C.M)

Formula No. of Plant = $cm^2 D = 0\frac{A \times 5085028}{C(B+D)}$

One Ropani = 22.55m×22.55m=5085025(cm^2)

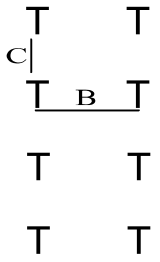
Question:- 90×60 cm single haze plant how many plant need in one Ropani land.

Here B= 90 cm

C= 60 cm

A= 1

Figure No. 5.2.6.2



$$N0 = \frac{A \times 5085028}{C(B+D)}$$

By formula No. of plant = $\frac{1 \times 5085028}{60(90+0}$

$= 941.67$

$= 942$

5.4 Pruning

After cultivation the tea, it is necessary to prune. Pruning is the shape of tea bush which is cutting in a fixed height & shape. Pruning helps the bush as following.

i) Pruning gives the tea bush in fixed shape & height
ii) Cut out the old stem and branch .
iii) Pruning helps to give healthiness the bush.

5.4.1 Pruning Types

i) Frame forming punning:- In the hill the frame forming pruning are as follows

Five Year Punning Cycle

Table No. 5.4.1

Year	Season	Activities	Plucking
0	summer	tea planting	to grow the plant
+1	winter	D-center (15-20 cm) Lung prune, thump, de- budding.	tipping (55-60 cm)
+2		un prune	tipping (55-60 cm)
+3	winter	1st formatting pruning (35-40 cm)	tipping (60-65 cm)
+4		un prune	tipping (60-65 cm)
+5	winter	final frame for muting prune (35-40)	tipping (60-65 cm)

Source: Field visit (2012)

5.4.2 Regular Pruning in Productive Stage

Table No 5.4.2

Productive Stage Five Years Pruning cycle

years	1st	2nd	3rd	4th	5th
3 years cycle	L.P	U.P	U.P		
4 years cycle	L.P	U.P	D.S	U.P	
5 years cycle	L.P	U.P	U.P	D.S	U.P

Source: Field visit (2012)

L.P-;Light pruning is (2-2.5) cm. Up from last years pruning.
D. S.-:D.S. is pruning is just mid point of L.P. and tipping point.
U.P.-: UP is un pruning.

5.6 Skiff

There are three types of skiff in tea garden

i) Medium skiff -: It is the pruning just below the crows -feet.
ii) Light skiff-: Pruning just below 5 cm. from last years pruning.
iii) Level of skiff -: It is skiff is only level of tipping.

5.7 Rejuvenate Pruning

i) Heavy pruning-: After (40-50)years heavy pruning is used.
ii) Medium pruning-: It is that types of pruning which is cut (35-45)cm. from land level.

Note: After all kinds of pruning the pest(Bordeaux mixture)is necessary.

5.8 Tipping (Plucking)

Tipping seasons are(April to November) every seven day. There are three types of tipping.

i) Black plucking-: Above (18-20)cm. from L P.
ii) Standard plucking -: One boad and two leaf picking.
iii) Light plucking-: One leaf left from table plucking.

CHAPTER - VI

SUMMARY, CONCLUSIONS AND RECOMMENDATOINS

6.1 Summary

Nepal is an agro - based country. Where more than 80% people are involved in agriculture sector. This sector contributes about 40% of the total G.D.P The contribution of auricular rural sector is decreasing. Although modern technical process can help to the agro production but it creates more than hundred kinds of problems on the field of agriculture instead of chemical fertilizer, pest and mineral all tamers follows the way of organic agriculture system. Man a women participation is one of the most important part of the tea cultivation. The cultivation create an opportunity of garneting and moistening household. But its activities have not provided a minimum facility to worker is such as life insurance, Child education and standard wage etc. because cultivation is self work. In world there are famous orgasmic or environment friendship agriculture are as follow.

i) Organic Agriculture
ii) Pema culture
iii) Nature Farming
iv) Bio-dynamic Agriculture
v) Regenerative Agriculture
vi) Ecological Agriculture
vii) Low-External Agriculture
viii) Agnihottra / Baidhic Agriculture

The process of organic Agriculture system are as below.

a) Vertical conversion in this process the chemical which is using by producer can by minimized in every year until 4 year. Process of agriculture one part of field has for cultivation the other part of field also use and continue follow to organic agriculture due to four years the primarily parts of field.

- ❖ Farmer must follow the rule for organic agriculture.

i) In the conversion period production can be decreased.
ii) Conversion period might be long.
iii) During the ;conversion period farmer must be serious.
iv) After conversion period might increase the auricular two production and can be control insect.
v) In the limited organic agriculture sector, insect can centralize

Since twenty years the organic tea cultivation has been started in all over the world the price of organic tea is high than the conventional tea (non-organic) production of organic tea is increasing in twenty times than the other tea.

- ❖ Challenges of organic tea cultivation in conversion period.

i) Production might be berceuse in conversion period.
ii) It need large number of labors.
iii) Ratio of potassium in organic (Compost) marital is countless.
iv) The rate is high of organic numeral.
v) It is not good organic market in the world.

- ❖ Profit of organic tea cultivation license.

i) License creates the faith between producer & consumer
ii) Resemble marketing.
iii) Real price
iv) Place of producer is respectable.

- For the soil management of organic tea.

i) Replace the organic element in soil and biodiversity of soil.

- For the long life and portion of biodiversity through organic tea.

ii) For increase of soil neutrality.
iii) Increase the starch of soil

- Manual for organic tea cultivation.

i) Compost mineral and cow dung are useful mineral for the organic agriculture.
ii) Green mineral (Dhaicha, Khhirro, Bakaynu, Ashuro, Banmara, Chilaune,Titepati, Simali, all bean groups plants) are useful for green manure for the organic agriculture.
iii) Hen wastage oil cake, wastage of bio-gas ,earthworm, also very useful for organic cultivation.
iv) Liquid mineral :– Uren of cattle compost tea, liquid of earthworm, homes liquid are best numeral for organic agriculture,

Organic mineral are :– Raijobiyam Ajetoyaktar Ajospirlem, Phosphors liquid manicurist, and E.M.

- Disease management for organic direful the for the disease management of plants it necessary to available starch for plant. Healthy plant can fight angst the disease. The micro disease which are harmful for plants, (Bacteria, virus, fungi, Nematode) E.M. are the main insecticide agents the micro-disease.

6.2 Conclusions

The tea development of agro based agriculture can positively effective in bringing the unemployment and reemployment manpower to various productive areas. A Hugh number of manpower are involved in tea farming and they can play a key role in every sector of development, but their efforts are not secured or rewarded. So that organic tea cultivation is also remarkable role to the national development have connected versus sector i.e. Environment, Bio-diversity national development, road, electricity, industries, national and international trade, correlation among global people, human health, natural resources, etc. all of above sector have co-related with organic tea cultivation in this process improved the like snared of people. Agro based. Cultivation help the G.D.P for nation. Although organic agriculture system could be success to carbon sells in the industrial countries in the world.

However manpower workers have highly participated in the organic tea cultivation. It is the compulsion of bread, butter and livelihood. In the mean time the tea cultivation and employment in tea sector is the back-bone of manpower inferior and minority. On the other hand tea cultivation plays an important role to check soil erosion. It also provides the valued Greenery and thus is a natural pollution checker.

In an overall analysis concluded tea cultivation brings about a pleasant social harmony and actually builds a society as well as nation.

6.3 Recommendations

On the basis of opinion expressed by respondent and according to the finding of the study the following recommendation are drawn in order to improve the organic tea cultivation in Tinjure tea farmer cooperative Association Ltd. Phakpohok Ilam.

i) Technology should be provided for the organic tea cultivation.
ii) The votaries need based training should be provided for farmer.
iii) Priority of employment opportunity should be given to local people it help to check the people for migration into tea sector.
iv) Organic certification should be provided to the farmer who had cross code of conduct of organic.
v) Transports facility should be provided for production.
vi) Alternative pesticides for organic cultivation must be provided by the owners.
vii) FLO (Fair trade heeling Organization) Must be applied.
viii) Oxen- market must be provident by the government.
ix) Defined form scientific backup. Such as composting pest management reality testing and done development.
xi) Field base research with full participation of farmers should be provided.
xii) Collaborative support in food safety measures, quality management system and good agriculture practices must be provided.
xiii) Finance sport should be provided to farmers such as micro-credit incentive package for processing unite.
xiv) For marketing every owners follow the
    a) Mobilize fair trade organization.
    b) Mobilize consulate
    c) Explore riche market
    d) Explore national market Trekking owner
    e) Develop common logo and slogan
    f) Developed value-added tea (high)
xv) Priority action should be realizing the fact together late make Joint commitment (Govt. Dev, international Agencies Private) to go Organic.

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Appendix E

Established Members (2051-7-5) of TTFCAL were

Coordinator : Padam bdr. Tamang
Member : Nar bdr. Khadka
Khadga bdr. Rai
Khadga bdr. Tamang
Ambar bdr. Rai
Kubir shingh Rai
Padam bdr. Basnet
Ratna bdr. Rai
Durga Pd. Khanal
Ritu kanta Khanal
Kul Pd. Rijal
Madav Pd. Paudel
Rajkumar Shrestha

Elected committee (20051-9-29) and (2056)

Chirman-Ritukanta Khanal
Vice " -Kubirsingh Rai
Mambers-Khadga Bd. Rai
-Khadga Bd. Tamang
-Nar Bd. Khadka
-Durga Pd. Khanal
-Padam Gajmar
-Giridhari Poudel
-Padam Bd Rai
-Madav Poudel
-Manager Padam Bd Tamang

Account Committee

Madv Poudel
Durga Pd. Khanal
Padam bd. Gajmer

Elacted commtte 2062 and (2060

Chairman : Tak bd. Paudel
Vice Deu bd. Rai
Member : Ritukanta Khanal
Tulasa Basnet
Ran bdr. Diyali
Raj kumar Shrestha
Laxmi bdr. Shrestha
Ghanendra ku. Rai
Dhansingh Rai
Santadir Tamang
Account committee
Madav Paudel
Durga pd. Khanal
Danshingh Rai

Appendix -F

NASAA CERTIFICATE OF REGISTRATION

RELEVANDARD RELEVANT ACCREDITPR

NASAA Organic standard in compliance with International Organic Accreditation The National Standard for Organic and Service (IOAS)

CERTIFICATE LICENSEE:

Kanchanjungha Tea Estate (pvt) Ltd SL1

Trading as : Kanchanjungha Tes Estate (Pvt) Ltd

GPO Box 8821
Kathmandu
Nepal

NASAA Certification Number : 8024sL1

583 Growers and 438. 25 ha of the Kanchenjunga Tea Estate, located in the panchthar area of Nepal

Grower Groups:	Ha's	Level of Certification
Agejung Farmer Group , Panchami-	20.05	Certified Organic 23 growers
Aphthyare Agejung Farmers Group, Subhan-	40.00	CertifiedOrganic 82 growers
Bangepani Farmers Group Nagi-	16.05	Certified Organic 13 growers
Chhantapu Small Tea farmers group, Nagin	36.95	Certified Organic 36 growers
Chillingden small Farmer Group Bharappa –	53.00	Certified Organic 51 growers
Janata Tea state - 19 growers	16.00	Certified Organic
Keshari Tea Estate, Yaktin -	20.00	Certified Organic 21 growers
Lalikharka Tea groweer Group, Lalikharka	37.65	Certified Organic 15 growers
Lekali organic Tea Group , Panchthar	13.00	Certified Organic 24 growers
Organic orange group, Phidim	5.05	Certified Organic
23 growers Pathivara Tea Estate, Oyam-	51.50	Certified Organic 61 growers
Seselujng Small Farmers Group Yangnam	42.95	Certified Organic 73 growers
Sumhalung Farmer Group,	14.50	Certified Organic 18 growers
Tinjure Tea Farmer co-operative, Phokphok	64.10	Certified Organic106 growers
Tribeni Small Farmers Group, Ranitar -	7.45	Certified Organic17 growers

National Association for sustainable A ure (Australia) Limited
CAN 003 260 348 and / or its, wholl l subsidiary NASAA Certified Organic Pty Ltd,

CAN 101 829 163 Unit 7B, 3 Mount Barker Road Sterling in the state of South Australia 5152

T:+6188370 8455/ f: +61 88370838 1/ enquiries@ nassa. Com au / www. Nassa. Com. Au
Certificate Number. C/03899/2008

Appendix G
NASAA organic code no. of TTFCAL farmers

S.N.	Name of Farmers	*Address*	*NASSA* Cod No	Area of Planted
1	Uddha Bd. Poudel	Phopoka -6	296	43-0-0-0
2	Kamal Praksh Tamang	Phopoka -6	297	32-00-0
3	Birkha Bd. Khatri	Phopoka -6	298	25
4	Man Kumar Tamang	Phopoka -8	299	7
5	Nar Bd. Khadak	Phopoka -6	300	14
6	Dhan Bd Basnet	Phakpok-6	302	7
7	Phaudrsingh Budathoki	Chamita -9	301	30
8	Akal Bd. Khatri	Phakfok -6	303	6
9	Bajbir Rai	Phakfok -5	304	15
10	Ratna Bd. Rai		305	10
11	Ram Dev Rai	Phakfok -5	306	40
12	Raj Kumar Shrestha	Phakfok -5	307	8
13	Laxmi Pd. Khanal	Ekatappa-4	308	5
14	Deu Bd. Rai	Chamita-9	309	4
15	Ram Bd. Diyali	Chamita-9	310	7
16	Ganesh Bd. Shrestha	Chamita -9	311	1
17	Kausila Shrestha	Ekatappa-2	312	3
18	Daran Bd. Shrestha	Ekatappa-2	313	2
19	Damber Kumari Shrestha	Ekatappa-2	314	10
20	Purna Bd. Bashnet	Phakfok-6	315	10
21	Ram Kumari Rai	Phakfok-6	316	2
22	Hari Pd. Korila	Phakfok-6	317	7
23	Ragubir Poudel	Phakfok-6	318	2
24	Kedarnath Khanal	Ekatappa-4	319	15
25	Suddhabir Rai	Phakfok-6	320	8
26	Dhan Raj Basnet	Phakfok-6	321	8
27	Padam Bd. Tamang	Phakfok-6	322	5
28	Lal Bd. Khatri	k-6	323	6
29	Santabir Ramang	k-7	324	7
30	Ganesh padya Khanal	Phakfok-6	325	10
31	Durga Pd. Khanal	Phakfok-7	326	10
32	Lok Nath Khanal	Ekatappa-4	327	7
33	Chandra Bahadur Tamang	Phakphok -6	328	4
34	Pabitra Parajuli	Phakphok-7	329	40
35	Khadak Bd. Tamang	Phakphok-6	330	40
36	Dal Bahadur Rai	Phakpok -5	331	40
37	Kabirman Baraili	Chamita -9	332	5
38	Pradad Sing Rai	Chamita -9	333	6

39	Purna Bd. Tamang	Phakpok-4	334	6
40	Padam Bahadur Rai	Chamita -9	335	6
41	Mahendra Dahal	Phakpok-6	336	5
42	Ran Bd. Bashnet	Phakpok-7	337	10
43	Chandra Bd. Paudel	Chamita -3	338	2
44	Bichari Tamang	Phakpok-6	339	8
45	Dhanraj Tamang	Phakpok-8	340	8
46	Jit Bd. Thapa	Ekatappa-1	341	30
47	Tika Ram Paudel	Ekatappa-1	342	5
48	Indra Kumar Paudel	Ekatappa-1	343	10
49	Thir Pd. Korila	Ekatappa-1	344	20
50	Prem Bd. Shrestha	Ekatappa-1	354	8
51	Lalbir Rai	Phakpok -5	346	20
52	Dik Bd. Thapa	Ekatappa-1	347	30
53	Dhan Bd. Rai	Phakpok-5	348	10
54	Kul Pd. Poudel	Chamita -9	349	2
55	Uttam Prakash Poudel	Chamita -9	350	4
56	Damber Bd. Deyali	Chamita -9	351	5
57	Kamal Rai	ıppa-5	352	2
58	Bir Bd. Bishokarma	ıita-9	353	18
59	Nayan Bahadur Rai	0Cnamita -9	354	6
60	Chandra Bd. Shrestha	Ekatappa-3	355	4
61	Padam Bd. Tamang	Phakpok-6	356	1
62	Nagendra Bd. Khatri	Phakpok-6	357	5
63	Prajapati Khanal	Ekatappa-5	358	5
64	Santa Kumar Tamang	Phakpok-8	359	14
65	Shadev Rai	Ekatappa-5	360	10
66	Ratna Bd. Rai	Phakpok-4	361	15
67	Lok Bd. Rai	Chamita -9	362	13
68	Kubirshing Rai	Phakpok-5	363	40
69	Bal Bd. Tamang	Phakpok-8	364	4
70	Dil Bd. Tamang	Phakpok-6	365	2
71	Rajendra Bd. Tamang	Phakpok-7	366	2
72	Ratna Bd. Tamang	Phakpok-8	367	5
73	Bam Bd. Tamang	Phakpok-8	368	4
74	Khadga Bd. Rai	Phakpok-6	369	24
75	Narbir Rai	Chamita -9	370	30
76	Madhav Poudel	Chamita -9	371	20
77	Gangaram Paudel	Ekatappa-4	372	20
78	Tek Bd. Paudel	Chamita-9	373	15
79	Amrit Kumar Paudel	Chamita -9	374	5
80	Bhupendr paudel	Chamita -9	375	6
81	Ram Kumar Rai	Chamita-9	376	2
82	Hari Bd. Khatri	Phakpok-6	377	24

83	Pradip Pd. Tamang	Phakpok-6	378	10
84	Bhanubhakta Korila	Phakpok-6	379	3
85	Tek Ram Rai	Phakphok-5	380	20
86	Dhansingh Rai	[illegible]ok-5	381	4
87	Homnath Bashnet	[illegible]ok-6	382	15
88	Rambir Rai	Phakphok-5	383	12
89	Khadak Pd. Rai	Phakphok-6	384	30
90	Dik Bd. Rai	Phakphok-5	385	5
91	Pahalman Bhattarai	Phakphok-6	386	20
92	Til Bd. Rai	Phakphok-6	387	20
93	Durga Bahadur Rai	Phakphok-6	388	24
94	Lila Bd. Rai	Phakphok-6	389	16
95	Tulasa Badnet	Phakphok-6	390	10
96	Pream Bd. Bhawan	Phakphok-7	391	7
97	Karna Bd. Thapa	Phakphok-7	392	8
98	Keshab Pd. Korila	Phakphok-7	393	5
99	Ritukanta Khanal	Ekatappa-5	394	21
100	Devi Khanal	Ekatappa-5	395	15
101	Bishnu Pd. Khanal	Ekatappa -5	396	4
102	Amar Bd. Rai	Phakphok-8	397	24
103	Tanka Bd. Tamang	Phakphok-5	443	5
104	Kul Pd. Poudel	Phakphok-6	444	6
105	Jaya Bd. Chamling	Phakphok-5	445	5
106	Prearaj poudel	Phakphok-6	446	5

Source : Field Survy TTFCAL(2012)