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Ethnomedicinal Uses of Some Plant Species by Ethnic and Rural Peoples of the Salem District of Tamilnadu with Special Reference to the Conservation of Vanishing Species

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ABSTRACT

Salem district sustain a very rich traditional medicinal plant wealth and inherits unique plant and animal communities. Due to deforestation, loss of biodiversity and indiscriminate exploitation of wild and natural resources many valuable herbs like *Abrus precatorius, Gloriosa superba, Martynia annua* etc are in the verge of extinction. The present paper enumerates status, conservation strategies and traditional uses of 68 plant species by the ethnic and rural people of Salem district of Tamilnadu. The claims were gathered by interviewing traditional healers, especially villagers of the study area. Attempt was made to verify the efficacy of claims with actual beneficiaries, though it was not possible in all cases due to social customs.

INTRODUCTION

In ethnobotanical studies, the major contribution has been in the field of medicine. A large number of ethnomedicinal information remained endemic to certain regions or people due to lack of communication. India is the second largest country in the world in respect of human population. Over 550 tribal communities are covered under 227 ethnic groups residing in about 5000 villages of India in different forests and vegetation types (Sikarwar 2002). The ethnic and rural people of India have preserved a large bulk of traditional knowledge of medicinal uses of plants growing around them. This knowledge is handed down to generations through word of mouth and is extensively used for the treatment of common diseases and conditions. Herbs are mines of useful drugs. it is evident that many valuable herbal drugs have been discovered by knowing that particular plant was used by the ancient folk healers for the treatment of some kind of ailment (Ekka & Dixit 2007). Moreover, the medicinal plant wealth is our national heritage and it seems to be the first and foremost line of defense for the treatment of various diseases mostly in tribal and rural communities. During the field survey it has been found by the authors that there are number of plants which are used by the ethnic and rural people of the region in curing various ailments and till date no any proper work has been performed by the research scholars of the area with proper citation and hence the present work was conceived by us to explore the hidden uses of the species. Salem is an important district of Tamil Nadu noTable for its picturesque landscapes dotted with hillocks, lakes, temples and forts etc. The district has its administrative head quarter located at the same town of Salem. Other major towns of the district include Mettur, Omalur and Attur. Salem was the largest district of Tamil Nadu before it was bifurcated into two administrative districts viz. Salem and

Dharmapuri districts. Again it was divided to form Namakkal District. Some important facts and figures about Salem district has been mentioned in Table 1.

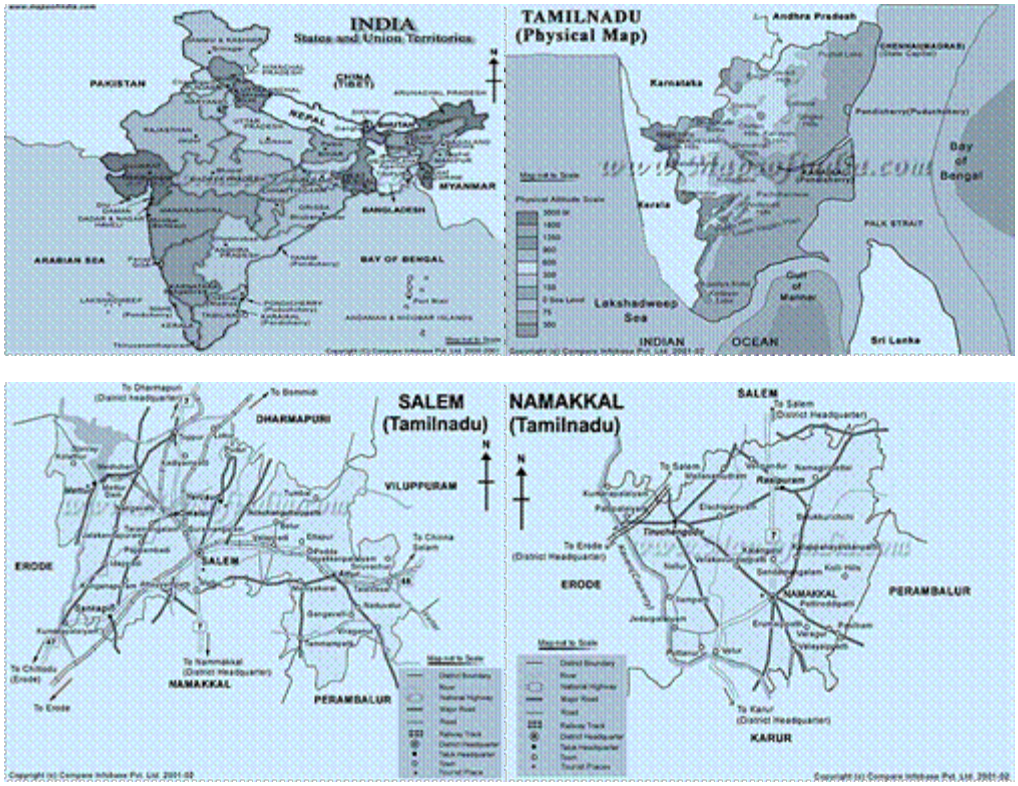

Table 1. Facts and figures about Salem district:

Area	5205 sq. km.
Area under Forests	125682 Hectare
Latitude	11°14’ and 12° 53’ N
Longitude	77° 44’ and 78° 50’ E
Population (2001)	3016346
Males	1563633
Females	1452713
Population density	573 (Per sq. km.)
Sex Ratio	929 females per 1000 males
Literacy Rate	57.50%
No. of Sub-Division	04
No. of Tehsil	09
No. of Blocks	20
No. of Villages	646
Average rainfall	363.5 mm.
Temperature	Max.: 37.9° C; Min.: 20.0° C

OBJECTIVE OF THE WORK

1. To collect scattered scientific information and identify the herbs used by the ethnic and rural people of Salem district of Tamilnadu.

2. To provide status of the plants which are endangered, vanishing or in the verge of extinction.

RESEARCH DESIGN AND METHODOLOGY

Following methods were adopted by the authors during the course of present investigation:

1. The plants used by the ethnic and rural people in the treatment of various diseases were collected by the investigator from the different study sites of Salem district during Aug-2007 to Jan 2008.

2. Field and survey work was made after carefully planned field trips. During the field trip personal interview was made between the authors and tribes of the regions.

3. Data regarding herbal remedies were collected as per plan suggested by Dwivedi (2003), Sinha (1998), Varghese (1996).

4. Voucher specimen were collected from different study sites and preserved as per method suggested by Agrawal (1983).

5. The plants were identified by Dr. M.U.Shariff, scientist, Botanical survey of india, Yercaud, Tamilnadu.

6. Confirmation of the specimen were made with the help of floristic literature Kurian (2003), and Khare (2004).

STUDY AREA

The present investigation has been carried out in the Salem district scattered over 5 villages and towns(Yercaud, Belur, Koneripatty, Pinanur, Pachmalai). For a proper and orderly study, the study sites were selected considering the population and density of flora. The local informants selected are:

1. Village farmers

2. Old persons

3. Hakims, vaidhayas, gunias and ojhas

4. People working on field

5. Ayurvedic doctors

6. Experts in the field of herbal medicine

OBSERVATIONS

STATUS, CONSERVATION STRATEGIES AND TRADITIONAL USES

During the course of the present work, the authors tried to have some idea of endangered, vulnerable, threatened, and rare medicinal plants. The status of medicinal plant of the study area has been established (Mc.Neel *et al* 1990, Phillips *et al* 1994), and the conservation strategies of these plants have been mentioned in Table 3. Direct discussion between the authors and different informants were made and the uses of the plants were recorded, mentioned in Table 2.

DISCUSSION AND CONCLUSION

In every ethnic group there exists a traditional health care system, which is culturally patterned. In rural

communities health care seems to be the first and foremost line of defense. The WHO has already recognized the contribution of traditional health care in tribal communities. In the present work authors have collected 68 plant species from different study sites. These species contain valuable chemical substances and are useful to cure various human ailments (Table-2). During the course of present investigation it has been found that 4 species are endangered, 3 vulnerable and rest are rare. It is very essential to have a proper documentation of medicinal plants and to know their potential for the improvement of the health and hygiene through an eco friendly system. Thus importance should be given to the potentiality of ethnomedicinal studies as these can provide a very effective strategy for the discovery of useful medicinally active identity. A detailed and systemic study is required for identification, cataloguing and documentation of plants, which may provide a meaningful way for the promotion of traditional knowledge of herbal medicinal plants. The present study reveals that the Salem district is rich in herbal medicine with diversified ethnobotanical values. From the Table presented, it can be seen that there is a wide variety of plants for common ailments and diseases. However different types of strategies are required to adopt to conserve the plants, which are vulnerable and endangered.

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Table 2. List of medicinal plant species in Salem district.

S.No.	Botanical Names	Local Name	Family	Part Used	Uses
1	Abrus precatorius L.	Gundu-mani	Papilionaceae	Root, leave, seed	Decoction of roots and leaves is given for cough and cold. Roots are diuretic and emetic. Paste of seeds applied locally in sciatica, stiffness of shoulder joints and paralysis.
2	Achyranthes aspera L.	Nayurivi	Amaranthaceae	Root, Seed, leaves	Decoction of herb diuretic, used in renal dropsies. Young leaves are served as spinach. Ash is rich in potash and used as manure. It is also used in time of bleeding in delivery.
3	Acorus calamus L.	Vasambu	Araceae	Rhizome	Rhizome used in epilepsy and other mental ailments, chronic diarrhoea, dysentery and abdominal tumour. It also has analgesic properties.
4	Alternanthera sessile DC.	Ponnangannikeeray	Amaranthaceae	Leaves, Shoots	Accredited with galactagogue properties, a good fodder, increase the flow of milk in cattle, also used for night blindness.
5	Andrographis paniculata Wall.ex. Nees	Nelavemu	Acanthaceae	Whole herb	Decoction used for sluggishness of liver and in jaundice. Leaves and roots used as febrifuge and antihelmintic. Plant used in dysentery, cholera, diabetes, influenza,

					bronchitis, itches and piles.
6	Acalypha hispida Burm f.	Vattattali	Euphorbiaceae	Flower	Flowers used in diarrhoea. Decoction used as laxative.
7	Argemone Mexicana L.	Kudiyoetti	Papaveraceae	Seed,	Seeds yield a nauseous bitter, non edible oil used in cutaneous troubles. it is cathartic. Yellow juice which exudes when the plant is injured, is used in scabies and in ophthalmia.
8	Annona squamosa L.	Seethe pazham	Annonaceae	Fruits, root, seed	Fruits edible with juicy white or cream yellow delicately flavoured, sweet flesh. Roots purgative, seed abortifacient.
9	Artabotrys hexapetalus R.Br.	Manoranjitam	Annonaceae	Leaves, flower	Leaves contain an antifertility principle. Flowers used for making a stimulating tea like beverage, also yield an essential oil used in perfumery.
10	Allemanda cathartica L.	Allemandatheega	Apocyanaceae	Leaves, root, bark	Leaves used as cathartic.
11	Alpinia calcarata Rosc.	Amkolinji	Zingiberaceae	Rhizome, oil, seed	Rhizomes used in rheumatism, and bronchial catarrh.. Flowers eaten raw or pickled. Seeds used for colic, diarrhoea, and vomiting. Herb also contain anti tubercular properties.
12	Alpinia galanga S.W.	Peraratthei	Zingiberaceae	Rhizome, oil, seed	Rhizomes used in rheumatism, and bronchial catarrh.. Flowers eaten raw or pickled. Seeds used

					for colic, diarrhoea, and vomiting. Herb also contain anti tubercular properties.
13	Acampe praemorsa Blatter.	Marabole	Orchidaceae	Leaves	The herb is accredited with anti typhoid properties. A paste of the pounded leave is applied to fractures. Plant is bitter, tonic and used in rheumatism.
14	Artemisia vulgaris L.	Machipatri/ nagdona	Asteraceae	Leaves, root	Infusion of leaves given in asthma, nervous and spasmodic affections. Roots used as a tonic and antiseptic.
15	Basella alba L.	Batsala /basala	Basellaceae	Leaves, fruit, stem	Sap from the fruits used for colouring food.mucilaginous leaves are pulped and used as poultice. Juice of the leaves given to children and pregnant women to remove constipation.
16	Bauhinia variegata L.	Segapumanchori	Caesalpiniaceae	Root, leave, bark seed	Decoction of roots is carminative and prevent obesity. Bark is used as anthelmintic.leaves and pods eaten as vegeTable. Dried buds used in diarrhoea, dysentery and piles. Leaves used for bidi manufacturing.
17	Boehmeria nivea Gaud.	Rhea	Urticaceae	Root, leaves	Its special use being in the manufacture of lustrous, non creasable fabrics. It is also used as anti inflammatory, astringent and

					demulcent properties.
18	Bauhinia purpurea L.	Mandari	Caesalpiniaceae	Whole plant	Roots carminative, bark used in diarrhoea, leaves used as a fodder, flower are laxative & anthelmintic.
19	Belamcanda chinensis DC.	Surjakanti	Iridaceae	Rhizome, stem.	Rhizome expectorant, carminative, diuretic, alexipharmic, used in tonsillitis and pulmonary and liver complaints. pulp from the stem used as stomachic.
20	Bixa orellana L.	Japhara	Bixaceae	Seeds	Mainly used for colouring food stuffs, silk and cotton.
21	Chenopodium ambrosioides L.	Katuayamoddakam	Chenopodiaceae	oil	Yield an essential oil, used as an anthelmintic against many worms of intestine. Also used as antirheumatic, sedative ,analgesic.
22	Cissus quadrangularis L.	Pirandai	Vitaceae	Root, stem	Powdered root specific for fractures. It is used in treatment of scurvy.
23	Coffea arabica L.	Coffee	Rubiaceae	Seeds	Roasted beans used for the preparation of coffee; also used for flavouring ice cream. Dried ripe seeds used as a stimulant, nervine and diuretic.
24	Calonyction muricatum G.Don.	Kattutali	Convolvulaceae	Pedicel, seed	Swollen pedicels edible. Seeds used as cathartic.
25	Camellia	Thayili	Theaceae	Leaves,	Leaves used as a

	japonica L.			seeds	substitute for tea. Seeds yield a fatty oil used as a lubricant for watches and better grades as hair oil.
26	Canarium strictum Roxb.	Karinkunthirikkam	Burseraceae	Wood , bark	Yield a resin known as black dammer used in the manufacturing of varnishes. Wood has a good glue holding capacity.
27	Centella asiatica L.	Vallarei	Apiaceae	Aerial parts	Diuretic and tonic, also used in leprosy, antihypertensive, antiviral, wound healing, brain tonic and antioxidant.
28	Catharanthus roseus G. Don.	Sudukadu mallikai	Apocynaceae	Root , leaves	Used in diabetes. Infusion of leaves used in menorrhagia, juice applied for relief of pain.also used as Anti cancer herb.
29	Crescentia cujete L.	Tiruvottukkay	Bignoniaceae	Fruits, bark, seeds,	Fruits diuretic, aperients and febrifuge.decoction of bark used as a vulnerary. Sap was used for dying silk black.
30	Cinnamomum camphora L.	Karpurammu	Lauraceae	Stem, root, seed ,leaves,	Chipped wood of stem and root is a source of natural camphor. plant accredited with stimulant diaphoretic, anthelmintic, antiseptic and anodyne properties.
31	Curcuma longa l.	Manjal	Zingiberaceae	Rhizome	Source of turmeric, used as a condiment and colouring agent. Used as stimulant, tonic, stomachic &

					carminative.
32	Coleus amboinicus Lour.	Karpuravalli	Lamiaceae	Leaves	Leaves used as flavouring agent. Also useful in urinary diseases. Decoction of leaves given for chronic cough and asthma.
33	Crinum asiaticum L.	Vishamungil	Amaryllidaceae	Bulb, leave, root	Bulbs emetic, leaves and roots diaphoretic and emetic, also used in urinary troubles.
34	Celastrus paniculatus Willd.	Valuluvai	Celastraceae	Bark, seed	Bark used as abortifacient, seeds tonic nad aphrodisiac, yield a fatty oil reputed as nerve stimulant and brain tonic.
35	Cycas circinalis L.	Canningay/madanagama	Cycadaceae	Seed, leaves	Juice of tender leaves given for flatulence.seeds yield starch used as food in time of scarcity. Sago obtained from trunk from about 7 year old plant.
36	Dodonaea viscosa L.	Velari	Sapindaceae	Leave, bark, fruit, seed	Leaves febrifuge, also used on burns, swellings and wound. seeds edible.
37	Datura metel L.	Vellum-mattai	Solanaceae	Leaves,	Leaves narcotic and antispasmodic
38	Eucalyptus citriodora Hook	Eucalyptus	Myrtaceae	Leaves, wood,	Leaves yield an essential oil used in perfumery. Timber used for various purpose like bridge construction, agricultural machinery, external fitting etc.
39	Eugenia uniflora L.	Pitanga	Myrtaceae	Fruits	Fruits eaten fresh or made into jellies,

					jams and pickles.seed yield an essential oil.
40	Ervatamia heyneana Cooke.	Kuruduppalai	Apocynaceae	Root, seed, flower.	Root chewed for relief from tooth-ache, also used as vermicide. Flowers used in inflammation.
41	Gloriosa superba L	Akkinichilam	Liliaceae	Tubers	Used as stomachic, anthelmintic and skin troubles.
42	Hibiscus rosa-sinensis L.	Semparuthi	Malvaceae	Flower, leaves	Flower eaten raw or pickled, their decoction given in bronchial catarrh. Leaves anodyne, emollient and aperients.
43	Hibiscus sabdariffa L.	Pulichchai kerai/ gogu	Malvaceae	Leaves, seed, fruit, calyx,	Fleshy calyx used for jellies and sauces, their infusion used as a refreshing and cooling beverages. Leaves diuretic. Leaves and stalk eaten as salad.
44	Impatiens chinensis L.	Vashtla/ pylee	Balsaminaceae	Entire plant	Plant used in the form of external application on burns, also used internally for gonorrhea.
45	Jatropha curcas L.	Kadalamanakku	Euphorbiaceae	Entire plant	Seeds yield an oil , a powerful purgative,also used for manufacturing candles, soaps, varnishes. It is used in paralysis, dropsy, & externally for skin troubles.
46	Kopsia fruiticosa A. DC.	Guttiganneru	Apocynaceae	Leaves, bark	It contain cholinergic action.

47	Leucas aspera Spreng.	Thumbai	Lamiaceae	Aerial parts	Employed as a pot-herb in time of scarcity. Juice of the leaves applied externally in psoriasis, chronic skin eruptions and painful swelling. Flowers are given with honey for cough and cold.
48	Lawsonia inermis L.	Marithondi	Lythraceae	Leaves, flower, seed	Leaves used for colouring skin and leathers and dying silk and wool, as a prophylactic against skin troubles.
49	Lantana camara L.	Unnichedi	Verbenaceae	Entire plant	Plant credited with vulnerary, diaphoretic, carminative, antispasmodic properties. decoction given in tetanus , rheumatism and malaria.
50	Martynia annua L.	Puli-nagam	Martyniaceae	Leaves, fruits, seed	Leaves eaten in time of scarcity; also used for epilepsy. Juice used as gargle for sore throat.
51	Mirabilis jalapa L.	Andhimalligai	Nyctaginaceae	Root, leave, stem	Juice of leaves applied to wounds. It is used as antibacterial, diuretic and purgative.
52	Mimosa pudica L.	Tottalvadi	Mimosaceae	Root, leave, seed.	Decoction of root used in gravel and other urinary complaints. Juice of leaves used in dressing for sinus, sores and piles.
53	Momordica dioica Roxb.	Tholoopavai/paluppakai	Cucurbitaceae	Roots, fruits	Fruits used as vegeTable. Roots used in bleeding piles, bowel

					affections, and urinary complaints.
54	Melia azedarach L.	Malai vembu	Meliaceae	Leave, bark, fruit, seed	Leaves, bark and fruits has insect repellent properties. Leaf juice anthelmintic, diuretic. Infusion of bark is given in ascariasis.
55	Nerium indicum Mill.	Arali	Apocynaceae	Root, bark, leave, flower	Leaves used as cardiotonic. Root bark used in skin diseases.
56	Pogostemon heyneanus Benth.	Kadir pachai	Lamiaceae	Leaves	Dried leaves used for scenting wollen and to keep off moths. Herb diuretic and carminative. Decoction of leaves given in cough and asthma.
57	Pavetta indica L.	Pavattai	Rubiaceae	Fruit, flower, root, leave	Fruit eaten raw or pickled. Infusion of flower used as cosmetic. Roots tonic, purgative, and diuretic & used for visceral obstruction, urinary disease, jaundice and dropsical affections.
58	Plumeria rubra L.	Segappu arali	Apocynaceae	Fruits, bark, latex,	Fruits edible but possess abortifacient property. Decoction of bark used as purgative, febrifuge and venereal affections. Root cathartic.
59	Piper nigrum L.	Milagu	Piperaceae	Fruits,	Fruits used as condiment after drying as black pepper. Pepper is employed as an aromatic stimulant, stomachic and as antiperiodic in

					malarial fever.
60	Quisqualis indica L.	Irangunmalli	Combretaceae	Fruits, seeds	Fruits and seeds anthelmintic. Ripe seed roasted and given in diarrhoea and fever; also used in rickets. Seed used for skin troubles.
61	Rubia cardifolia L.	Shevelli/manjitti	Rubiaceae	Roots, leaves,	Roots tonic, antidysentric, antiseptic. Decoction of leaves and stems used as a vermifuge.
62	Solanum nigrum L.	Munatakali	Solanaceae	Entire plant	Antiseptic, antidysentric. Infusion of herb applied to anthrax pustules. The herb also used as diuretic and laxative. Decoction narcotic and antispasmodic. domestic remedy for fever, diarrhoea and eye troubles.
63	Santalum album L.	Sandanam /ulocidum	Santalaceae	Wood, oil	Both the wood and oil are diuretic, diaphoretic, refrigerant, expectorant & in perfumery.
64	Terminalia chebula Retz.	Kadukkai	Combretaceae	Fruit, root, bark, kernel	Fruits laxative, stomachic, tonic, & form a constituent of triphala. Fruit pulp used in dentifrices.powdered fruit is smoked in asthma. Bark diuretic and cardiotonic.
65	Tecoma stans L.	Sona-patti	Bignoniaceae	Root, leave	Roots are powerful diuretic, vermifuge and tonic. Leaves are used as antidiabetic.

66	Trema orientalis Blume.	Ambaratthi/chenkolam	Ulmaceae	Entire plant	Decoction of bark used for tanning and toughening fishing line. Bark yield a fibre used for rope, twine and coarse cloths. Decoction of root given in diarrhoea and presence of blood in urine. Root-bark and leaves used in epilepsy.
67	Tylophora indica Burm.f.	Nach-churuppam/ Peyppalai	Asclepiadaceae	Root, leave	Roots stimulant, emetic, cathartic, expectorant, stomachic and diaphoretic used in asthma, bronchitis, whooping cough, dysentery, and diarrhoea. Also given in rheumatic and gouty pain.
68	Vitex negundo L.	Vellai-nocohi/ Nirkkundi	Verbenaceae	Leave, root, flower	Leaves tonic, and vermifuge; smoked for relief in catarrh and headache. Roots tonic, febrifuge, diuretic, used in rheumatism, dyspepsia and as anthelmintic; also employed as demulcent in dysentery and piles. Flower astringent used in diarrhoea, fever and liver complaints.

Table 3. Status and conservation strategies of Vulnerable and Endangered plant species.

S.No.	Botanical Name	Local Name	Status	Conservation strategies
1	Abrus precatorius L.	Gundu-mani	EN	TC-OA
2	Achyranthes aspera L.	Nayurivi	VU	TC-OA

3	Acorus calamus L.	Vasambu	CR	TC-OA
4	Andrographis paniculata Wall.ex. Nees	Nelavemu	EN	ESC-HG
5	Bauhinia variegata L.	Segapumanchori	EN	TC-OA
6	Cissus quadrangularis L.	Pirandai	CR	ESC-HG
7	Gloriosa superba L	Akkinichilam	EN	ESC-CAP
8	Leucas aspera Spreng.	Thumbai	VU	ISC
9	Momordica dioica Roxb.	Tholoopavai/paluppakai	VU	ESC-N
10	Martynia annua L.	Puli-nagam	CR	TC-FTRA

Abbrevations: VU- Vulnerable, EN- Endangered, CR- Critical Endangered

1. ISC: In-situ conservation
2. ESC: Ex-situ conservation
3. ESC-HG: ESC- Home gardens, ESC-N: ESC- Nurseries, ESC-CAP: ESC- Cultivation and agriculture production.
4. TC: Traditional conservation
5. TC-FTRA: TC- Faith, Tradition and religious Aspects, TC-OA: TC- Other aspects.