



Ministry of Forestry
Forest Department
Forest Research Institute



Preliminary Screening and Categorization of Forestry Related Literatures (Technical, Books, Article, etc.) in Myanmar



**Ohn Lwin, Assistant Director
Mya Mya Than, Assistant Librarian-2
Han Min Naung, Staff Officer
Ei Ei Khaing, Assistant Librarian-3
Thin Thin Soe, Research Assistant -3
Forest Research Institute**

December, 2009

မြန်မာနိုင်ငံအတွင်း ဆောင်ရွက်ခဲ့ပြီးသော သစ်တောကဏ္ဍဆိုင်ရာ စာအုပ်၊စာတမ်းများကို ပဏာမစုစည်းလေ့လာဆန်းစစ်ခြင်း

ဦးအုန်းလွင် (လက်ထောက်ညွှန်ကြားရေးမှူး)
ဒေါ်မြမြသန်း(စာကြည့်တိုက်လက်ထောက်-၂)
ဦးဟန်မင်းနောင် (ဦးစီးအရာရှိ)
ဒေါ်အိအိခိုင်(စာကြည့်တိုက်လက်ထောက်-၃)
ဒေါ်သင်းသင်းစိုး(သုတေသနလက်ထောက်-၃)
သစ်တောသုတေသနဌာန

စာတမ်းအကျဉ်းချုပ်

ဤစာတမ်းတွင် ဖော်ပြထားသော သစ်တောကဏ္ဍဆိုင်ရာ စာအုပ်၊ စာတမ်း၊ ဆောင်းပါးများကို အစိုးရဌာနများမှ၎င်း၊ အစိုးရမဟုတ်သော အဖွဲ့အစည်းများမှ၎င်း၊ ပုဂ္ဂလိကထုတ်ဝေဖြန့်ချိမှုများမှ၎င်း၊ မတူညီသောနေရာ(၂၅)နေရာမှ စာရင်းကောက်ယူစုဆောင်းခဲ့ပါသည်။ ယခုအချိန်ထိကောက်ယူစုဆောင်းရရှိသော သတင်းအချက်အလက်စုစည်းမှုမှာ (၂၈၀၀)ခန့်ရှိပြီး ၎င်းအနက်(၂၀၁၆)ကို ပဏာမအနေဖြင့် လေ့လာဆန်းစစ်ထားပါသည်။ ကျန်ရှိနေသောအချက်အလက်များကို ဆက်လက်လေ့လာဖော်ထုတ်သွားမည် ဖြစ်ပါသည်။

ကောက်ယူစုဆောင်းရရှိသော သတင်းအချက်အလက်အသီးသီးကို ပထမဦးဆုံး (၁)စာအုပ်၊ စာတမ်းအမည် (၂)စာရေးသူ၊ပူးပေါင်းရေးသားသူ (၃)ထုတ်ဝေသည့်ခုနှစ် (၄)မူရင်းဒေသ (၅)တည်ရှိရာ ဒေသ တို့ကို စာရင်းရေးသွင်းမှတ်တမ်းတင်ခဲ့ပါသည်။

ဤစာအုပ်၊ စာတမ်းများ၏ သစ်တောကဏ္ဍအလိုက်ဆက်စပ်မှုများကို ဖော်ထုတ်နိုင်ရန်အတွက် (၁)စာကြည့်တိုက်များတွင် အသုံးပြုလျက်ရှိသော ဒုတိယသမမျိုးတူစုပြနည်းဖြင့် အမျိုးအစားခွဲခြားခြင်း ဖြင့်၎င်း (၂)မြန်မာနိုင်ငံသစ်တောပညာရှင်အဖွဲ့မှ အဆိုပြုတင်ပြထားသော အဓိကသစ်တောဘာသာရပ်များ ကို အခြေခံလျက်၎င်း (၃)သစ်တောမူဝါဒ၏ပဓာနကျသောအချက်(၆)ချက်ဖြင့် ၎င်း (၄)အမျိုးသားသစ်တော ကဏ္ဍပင်မစီမံကိန်းနှစ်(၃၀)တွင်ပါဝင်သောအချက်(၁၈)ချက်ဖြင့် ၎င်း၊(၅)စာတမ်းမူ၏ ရည်ရွယ်ချက်အားဖြင့် ၎င်း ဆက်စပ်မှုများကို လေ့လာဖော်ထုတ်၍ တွေ့ရှိချက်များကို ဆွေးနွေးတင်ပြထားပါသည်။

အမျိုးအစားခွဲခြားလေ့လာမှုအရ သစ်တောကဏ္ဍဆိုင်ရာ ဆောင်းပါးများနှင့် သုတေသနစာတမ်း များသည် အများဆုံးပါဝင်နေပြီး မဟာဝိဇ္ဇာနှင့်ဒီပလိုမာ အမျိုးအစားတို့မှာ အနည်းဆုံးပါဝင်နေကြောင်း တွေ့ရှိရပါသည်။

ဘာသာရပ်များအလိုက်ခွဲခြားလေ့လာမှုအရသစ်တောအသုံးချမှုဘာသာရပ်နှင့်သစ်တောပြုစုရေးဘာသာရပ် သည်အများဆုံးဖြစ်နေပြီး သစ်သားဆိုင်ရာနည်းပညာသည်ဒုတိယအများဆုံးပါဝင်နေကြောင်း တွေ့ရှိရပါသည်။

သစ်တောမူဝါဒ၏ ပဓာနကျသော အချက်(၆)ချက်ဖြင့် ဆက်စပ်မှုကို လေ့လာ ဆန်းစစ်ချက်အရ ထာဝစဉ်တည်တံ့စေခြင်းနှင့်သက်ဆိုင်သောအချက်အလက်များသည်အများဆုံး ပါဝင်နေပြီး ပြည်သူ့ အတွင်း နှီးကြားထကြွသည့်အသိရှင်သန်နေစေခြင်းတွင် အနည်းဆုံး ဆက်စပ်နေကြောင်း တွေ့ရှိရပါသည်။

အမျိုးသားသစ်တောကဏ္ဍ ပင်မစီမံကိန်းနှစ်(၃၀)တွင် ပါဝင်သောအချက်(၁၈)ချက်ဖြင့် ဆက်စပ် များကို လေ့လာဆန်းစစ်ရာတွင် သုတေသနနှင့်ဖွံ့ဖြိုးရေးကဏ္ဍနှင့် ပတ်သက်သည့် အချက်အလက်များကို အများဆုံးတွေ့ရှိရပြီး ကြီးကြပ်စစ်ဆေးခြင်းနှင့်အကဲဖြတ်ခြင်း ကဏ္ဍတွင် အနည်းဆုံး ဆက်စပ်နေကြောင်း တွေ့ရှိရပါသည်။

စာတမ်းမူ၏ရည်ရွယ်ချက်ဖြင့် ဆက်စပ်မှုများကို လေ့လာရာတွင် Basic Sciences & Education, Technology ကဏ္ဍကို အထောက်အကူပေးနိုင်သည့် အချက်အလက်များသည် အများဆုံး တွေ့ရှိရပြီး ပြည်သူလူထုသို့ တိုးချဲ့ပညာပေးရေး Public extension ကဏ္ဍကို အထောက်အကူပေးနိုင် သည့် အချက်အလက်များသည် အနည်းဆုံးပါဝင်နေကြောင်း တွေ့ရှိရပါသည်။

နိဂုံးချုပ်အနေဖြင့် စာတမ်းရှင်များမှ သစ်တောကဏ္ဍဆိုင်ရာ စာအုပ်စာတမ်းများကို ဆက်လက် ကောက်ယူရန် ဆန္ဒရှိပြီး Forestry information update ထူထောင်နိုင်ရန်အတွက် အကြံဉာဏ်များ တောင်းခံတင်ပြထားပါသည်။

Preliminary Screening and Categorization of Forestry Related Literatures (Technical, Books, Article, etc.) in Myanmar

U Ohn Lwin (Assistant Director)
Daw Mya Mya Than (Assistant Librarian-2)
U Han Min Naung (Staff Officer)
Daw Ei Ei Khaing (Assistant Librarian-3)
Daw Thin Thin Soe (Research Assistant -3)
Forest Research Institute

Abstract

In this study, forestry related literatures were collected from as many as 25 different sectors including governmental, non- governmental and private-publish. Up till, about 2800 of different kinds of literatures were gathered. A 2016 of collected list was initially categorized into 5-categories by using (i) Dewey Decimal Classification system of library method to classify the “Type”, (ii) major forestry subjects proposed by advisory committee, Myanmar Academy of Forestry Sciences, (iii) imperatives of forest policy, (iv) National Forest Master Plan and in addition to (v) special purpose of this study.

Each literature after collecting was firstly registered by its description, such as title, author and co-author, published year, location and source.

The study revealed that most of total forestry related papers were found in “Article” and “Research paper” type. Types of “Master of Arts”, and “Diploma” were found poorest among other types.

For classifying by subject, “Forest Utilization” and “Silviculture” were observed superior followed by “Wood Technology”.

According to study of six imperatives of forest policy, literature for sustainability was highest while “Public Awareness” was observed poorest in number of literature.

For categorization by “National Forest Master Plan”, “Forest Research and Development” was observed superior, on the other hand, “Monitoring and Evaluation” was initially observed poorest among others.

Literatures of “Basic Science and Education, Technology” was found superior in “Special Purpose of the Study”. Research team informed a number of suggestions based on the findings of this research.

Finally, the team reported to continue in collecting more literatures so that the library of FRI to be a center for updating forestry information under the Forest Department, Ministry of Forestry in near future.

Keywords: forestry related, literature, information update, categorization, library.

Contents

Page

စာတမ်းအကျဉ်းချုပ်	i
Abstract	iii
1. Introduction.....	1
2. Literature Review.....	1
3. Problem Statement.....	3
4. Objectives.....	4
5. Materials and Methods.....	4
5.1. Type.....	5
5.2. Major forestry subject.....	5
5.3. Imperatives of the forest policy.....	6
5.4. National Forest Master Plan	7
5.5. Special purpose of the study.....	8
5.6. Analysis	8
6. Results and Discussion.....	8
6.1. Type.....	8
6.2. Major forestry subject.....	9
6.3. Imperatives of the forest policy.....	10
6.4. National Forest Master Plan.....	10
6.5. Special purpose of the study.....	11
7. Conclusion.....	12
8. Recommendation.....	13
9. Acknowledgements.....	14
10. References.....	15
11. Appendix 1	16
12. Appendix 2	17
13. Appendix 3	20
14. Appendix 4	20
15. Appendix 5	21
16. Appendix 6	21
17. Acronyms	22

1. Introduction

The Forestry sector is one of the most vital sector in the national economy, and development not simply because of the revenue generating for the national coffer, but also for the role that forests play in environmental stability and biodiversity conservation, the contribution to the socioeconomic well-being and many kinds of produce that forests provide for man. Besides other sectors of the economy like agriculture, fishery, husbandry are closely inter-linked to the forestry sectors. (Saw Han,1994). Nowadays, information technology and library management play, on the other hand, crucial role to support development of all sectors.

The forest research institute FRI has strategic plan to provide technical information on all aspects of forestry and forest based activities with the objectives of increasing the contribution of the forests and forest lands to the well-being of the nation.

The extension services on technical matters have been encouraged freely available to the forestry community and other related organizations in the country.

Today, the extension section under the supervision of FRI plans to minimize the above problems by collecting forestry related literatures. And then, up-dated information package will be delivered to end-users and related institutions and organizations in Myanmar.

2. Literature review

A number of national and international experts suggested that forestry information system should be establish under the Forest Department, Ministry of forestry.

Dr.Quiaoquiao Zhang, FORSPA, 1997 mentioned that the present state of the forestry research information system in Myanmar is not developed and much still need to be done to improve it, among the major problems are:

- (i) A lack of forestry information policy and strategy at the national level; high-level commitment is still not forthcoming
- (ii) Poor access to current information resources both international and local especially forestry related organizations
- (iii) A lack of proactive library and information services
- (iv) Inadequate professional training of library and information staff
- (v) Lack of application of modern information technology to information and library management.(or) Need to be more develop (ICT), information communication technology
- (vi) An underdeveloped information and publishing industry.(or) The overlap of research title by lack of sharing and publishing
- (vii) Ineffective dissemination of information

Myanmar agenda 21 stated that sustainable development of the country, information and communication technology ICT played a crucial role as follows;

- (i) Improve forestry research, education and communication to meet the new challenges of forestry management.
- (ii) Clarify institutional linkages and coordination within and between related sectors rural development; agriculture/livestock; mining; irrigation and hydro; and environmental protection.

- (iii) Review the functioning of the Forest Research Institute and suggest restructuring and needed support in terms of improvement in infrastructure and facilities.
- (iv) Identify research priorities while taking note of user needs in research programme areas relating to : forest management; silviculture; biotechnology; wood technology; non-wood technology; forest industry; ecology and environmental management; community and private forestry development and nature conservation.
- (v) Prepare a forestry research development plan to include priorities with a short, medium and long-term perspective.
- (vi) Establish effective mechanism for lab-to-land transfer of research results.
- (vii) Establish mechanism for collaboration and promotion of forestry research through research contracts with universities, NGOs, autonomous research council/research associations and client participation.
- (viii) Update knowledge and information through research networking.

Regarding to strengthen forestry information and communication, following activities should be undertaken.(Dr.Furtado, 2006)

- (i) Prepare a forestry extension programmes for field implementation.
- (ii) Strengthen the extension division in the Forest Department both in terms of manpower and resources to plan, implement and monitor forestry extension activities.
- (iii) Prepare a special extension programme for dissemination and application of research results and advisory services to rural communities as well as forestry industries.
- (iv) Establish an effective delivery and recipient system through specialized training for extension staff, farmers training and organization building at grassroots level.
- (v) Establish an Information, Education and Communication (I.E.C) library in the Forest Department headquarters and develop I.E.C materials to strengthen field infrastructure.

In forestry sector, FRI is the main institution undertaking forest-related “Research and Development” in Myanmar (table 1). However several other institutions also undertake research and development in forest-related areas.

Table 1: Institution conducting forest-related research in Myanmar

Research Areas	Sectors		
	Government	Government R&D/ Academic	Private/Civil
Natural forest management	FD, PSD, DZGD, MPCE, MTE, MPC	FRI, DAR, DAP, PSD, YU, MU	FREDA
Plantation forests and afforestation	FD, PSD, DZGD, MPCE, MTE, MPC	FRI, UOF, MU	
Forest rehabilitation and reforestation	FD, PSD, DZGD, MPCE, MTE, MPC	FRI, UOF	FREDA
Agro-forestry and community livelihoods	DZGD, CFDT, DTM, CID	FRI, DAR, UOF, YAU, MU	CARE, FREDA
Land use and environmental impacts	FD, PSD, SLRD, WRUD, MAS, NCEA	FRI, DAR, YAU, MU	MAAFLFS
Wood processing and technology	MTE	FRI	
Non-Timber products processing	FD, DTM, CID	FRI, DAR	
Biodiversity and protected areas	DNWC, MLF	DNWC, YZ, NKBG, FRI, YU, MU, LBVD	WCS, BANCA

Although research has been undertaken at the operational and industrial level in the seven strategic areas identified in the MFP, FRI has yet to be fully engaged in all of them due to organizational and managerial constraints. A strategic planning process is under way to formulate a nationally coordinated research programme which should facilitate re-organization of FRI as an institution around research thrusts and capable research leaders.

While appearing simple, transferring R&D responsibilities to other institution often results in their actual neglect due to prevailing work over-load in most recipient institution or to tasks not being allocated primary responsibility by either the donor or recipient institution. This option appears difficult at present for FRI to exercise except with regard (a) to publicising events in the media or newsletters of other related organizations; and (b) to seeking other related organizations to monitor information in specific areas (e.g. DTM on traditional medical & health systems).

3. Problem Statement

Poor access to information has further compounded the problem. Virtually the researchers have very little opportunity to learn about recent development on account of the inability of the FRI to procure journal and other publications. When the FAO/UNDP project was under implementation, the FRI used to obtain subscribe to 53 Journals. Since the termination of the Project, this number has dropped down to 3. Even some of the journals published by institutions in the region (E.g. Indian Forester and Malaysian Forester) have not been subscribed to for the last several years. Although FORSPA

provided a CD-ROM Work Station and TREECD updates, this is inadequate to keep pace with the developments.

Acquisition of reference books has also suffered on account of resource constraints, in particular restrictions relating to the use of foreign exchange. Since the termination of the FAO/UNDP and other organizations, the very poor state of access to information has contributed to the present lack of scientific skills and hence the tendency to focus attention on routine activities. Tackling complex problems and development of application oriented technologies require access to information on what is being done elsewhere and to regularly upgrade the knowledge base. This is almost impossible under the present conditions. The main problems relating to information services have been described in a FORSPA review undertaken by the CAB International (Zhang, 1997)

As mentioned above, this study on screening and analyzing of forestry related paper in Myanmar was needed to fulfill the R & D in forestry sector.

4. Objectives

It is therefore set up the objectives of this study as follows;

1. To explore the development of forestry education in Myanmar
2. To assist and guide those who are studying in forestry related area
3. To facilitate forestry related organizations through disseminating and sharing information
4. To establish the Forestry Information Update in FRI in near future

5. Materials and Methods

All forestry related literatures, thesis (Ph.D, M.A, M.Sc, M.Res, Diploma, Term paper), research papers, published books, lecture notes and articles were firstly collected from possible sources and registered their descriptions as shown in table.2.

Table 2: Collection form

Sr.No.	Title	Author	Co-Author	Publish Year	Location	Source
(1)	(2)	(3)	(4)	(5)	(6)	(7)

After collection, all literatures were categorized into 5 main groups as follows.

1. Type
2. Major forestry-subject
3. Imperatives of the forest policy
4. National Forest Master Plan and
5. Special purposes of the study

5.1. Type

According to the “type” of literature, the collections were again divided into 12 different types as presented in table 3.

Table 3: Categorization within “Type”

Sr.No.	Code	Categories
1.	PD	Ph.D
2.	MA	M.A
3.	MS	M.Sc
4.	MR	M.Res
5.	Dip	Diploma
6.	RP	Research Paper
7.	TD	Technical Document
8.	TP	Term Paper
9.	B	Book
10.	LN	Lecture Notes
11.	At	Article
12.	D	Documents

Thesis means a long piece of writing on a particular subject, especially one that is done for a higher college or university degree: a doctoral thesis (= for PhD) (CAMBRIDGE Dictionary. P.1344)

Research-paper means a detailed study of a subject, especially in order to discover (new) information or research a (new) understanding : scientific/medical research. (CAMBRIDGE Dictionary P.1079) ; A piece of writing on a particular subject written by an expert and usually published in a book or Journal. (CAMBRIDGE Dictionary. P.913)

Technical Document is relating to practical skills and methods that are used in a particular activity. (CAMBRIDGE Dictionary. P.1332)

Term Paper is the main report written by a student for a particular class or subject in the middle of each school term. (CAMBRIDGE Dictionary P.1338)

Book is a set of pages that have been fastened together inside a cover to be read or written in. (CAMBRIDGE Dictionary. P.136)

Article is a piece of writing on particular subject in a newspaper or magazine. (CAMBRIDGE Dictionary. P.62)

5.2. Major forestry subject

Secondly, all collected papers were again grouped into 16 major subjects plus its sub-subject. Detail classification of subjects was given in table 4.

For instance, the silviculture subject was temporarily given as the code “A” and nursery, plantation, natural forest and agroforestry were mentioned A1, A2, A3, A4 respectively.

Table 4: Categorization within “Major forestry subject”

Sr.No	Code	Major Forestry Subject	Sub-Code	Related Sub-subject
1.	A	Silviculture	A1	Nursery
			A2	Plantation
			A3	Natural Forest
			A4	Agroforestry
2.	B	Forest Management	B1	Natural Forest Management
			B2	Plantation & Working Circle
			B3	Monitoring and Evaluation
3.	C	Forest Protection	C1	Forest Fire
			C2	Pest & Disease
			C3	Insect
			C4	By Human
4.	D	Forest Utilization	D1	Timber
			D2	Non-Wood Forest Products
			D3	Medicinal Plant
			D4	Extract
			D5	Energy
			D6	Lesser Used Species
5.	E	Wood Technology	E1	Timber Physic
			E2	Chemical
			E3	Anatomy
			E4	Morphological
6.	F	Forest Inventory	F1	Mensuration
			F2	Survey
			F3	Remote Sensing & GIS
7.	G	Social Forestry	G1	Community Forestry
			G2	Extension
			G3	Socio-Economics
8.	H	Biodiversity&Environmental Conservation	H1	Plant Conservation
			H2	Wildlife Conservation
9.	I	Soil Science		
10.	J	Hydrology	J1	Watershed
11.	K	Forest Engineering	K1	Harvesting
12.	L	Forest Economics		
13.	M	Forest Policy & Law	M1	Instruction
14.	N	Forest Botany	N1	Taxonomy
			N2	Dendrology
			N3	Tree Improvement
15.	O	Environmental Forestry		
16.	P	Research &Development		

Source: (U Than Myint, *et.al.*, 2001)

5.3. Imperatives of the forest policy

All registered samples were again partitioned by six imperatives of forest policy according to its objectives met as shown in table 5.

Table 5: Six imperatives of the forest policy

Sr. No.	Imperatives	Code	Description
1.	Protection	Pro	Protection of soil, water, wildlife, biodiversity and environment.
2.	Sustainability	Sus	Sustainability of forest resources to ensure perpetual supply of both tangible and intangible benefits accrued from the forests for the present and future generations.
3.	Basic Needs	BN	Basic Needs of the people for fuel, shelter, food and recreation.
4.	Efficiency	Ef	Efficiency to harness, in the socio-environmentally friendly manner, the full economic potential of the forest resources.
5.	People Participation	PP	Participation of the people in the conservation and utilization of the forests.
6.	Public Awareness	PA	Public Awareness about the vital role of the forests in the well being and socio-economic development of the nation.

Source: (Ministry of Forestry, 1996)

5.4. National Forest Master Plan

Moreover, all samples were categorized into 18 chapters mentioned in National Forest Master Plan for 30 years (2001-2002 to 2030-2031) and one more chapter as other which consisted those not including in chapters of NFMP. Detail was shown in table 6.

Table 6: Categorization of National Forest Master Plan “NFMP”

Sr.No.	Chapters in NFMP	Code
1.	Policy, Law, Infrastructure	1
2.	Forest Services	2
3.	Natural Forest Management	3
4.	Forest Plantation	4
5.	Forest Protection	5
6.	Watershed Management	6
7.	Community Forestry	7
8.	Biodiversity Conservation	8
9.	Timber Harvesting	9
10.	Wood Based Industries	10
11.	Forest Products – Marketing	11
12.	Bio-energy	12
13.	Non-Wood Forest Products	13
14.	Forest Resources Outside the Forest	14
15.	Human Resource Development	15
16.	Forest Research and Development	16
17.	Forest Extension	17
18.	Monitoring and Evaluation	18
19.	Others	19

Source: (Ministry of Forestry, 2001)

5.5. Special purposes of the study

Finally, all samples were categorized into 8 consistent with the special purposes of the study as presented in table 7.

Table 7: Categorization of the special purposes of the study

Sr.No.	Objectives	Code
1.	To support Basic Sciences & Education, Technology	1
2.	Applied	2
3.	Public Extension	3
4.	Environmental	4
5.	Country's Economy	5
6.	Rural Development	6
7.	Health	7
8.	Energy	8

5.6. Analysis

Genstat 9.2 version, MicroSoft Excel 2003 were appropriately used in this study.

6. Results and Discussion

Altogether about (2800) forestry related literatures were collected from (25) different places and a total of (2016) was firstly categorized by using five methods such as (1)Type, (2) Major forestry subject, (3) Imperatives of the forest policy, (4) National Forest Master Plan and (5) Objective of the study as mentioned earlier. Detail result for each method was explained as follows.

6.1. Type

The result exhibited that the type of "Articles" revealed superior with (545) followed by research papers with (456). The number of "Term papers", "Book", and "Master thesis" were found similar with (233), (224) and (210) respectively as presented in figure 1 and detail was shown in appendix 1.

The collections from "Master of Arts" and "Diploma" were observed the poorest in this study. It was therefore suggested that Arts major of universities should be encouraged to more relate their research in forestry sector. On the other hand, FD should plan how to facilitate and help those to accomplish more forestry related researches in near future.

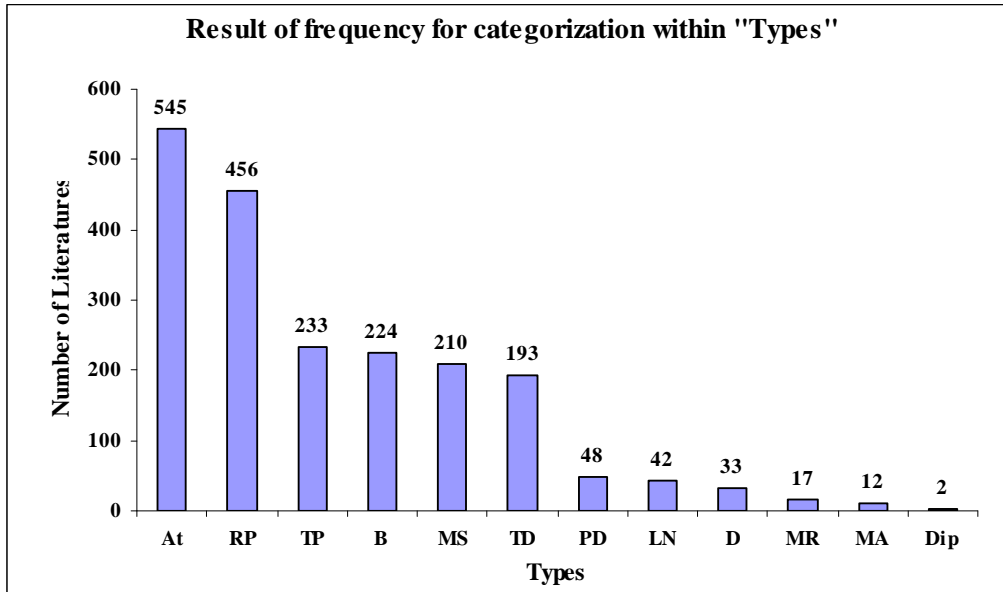


Figure 1. Result of frequency for categorization within Type.

6.2. Major forestry subject

The result showed that the subjects of “Forest Utilization” and “Silviculture” revealed abundant with (399) and (398) respectively, followed by “Wood Technology” with (170). “Forest Economics” was found the poorest among all major forestry-subject, as shown in figure 2 and appendix 2.

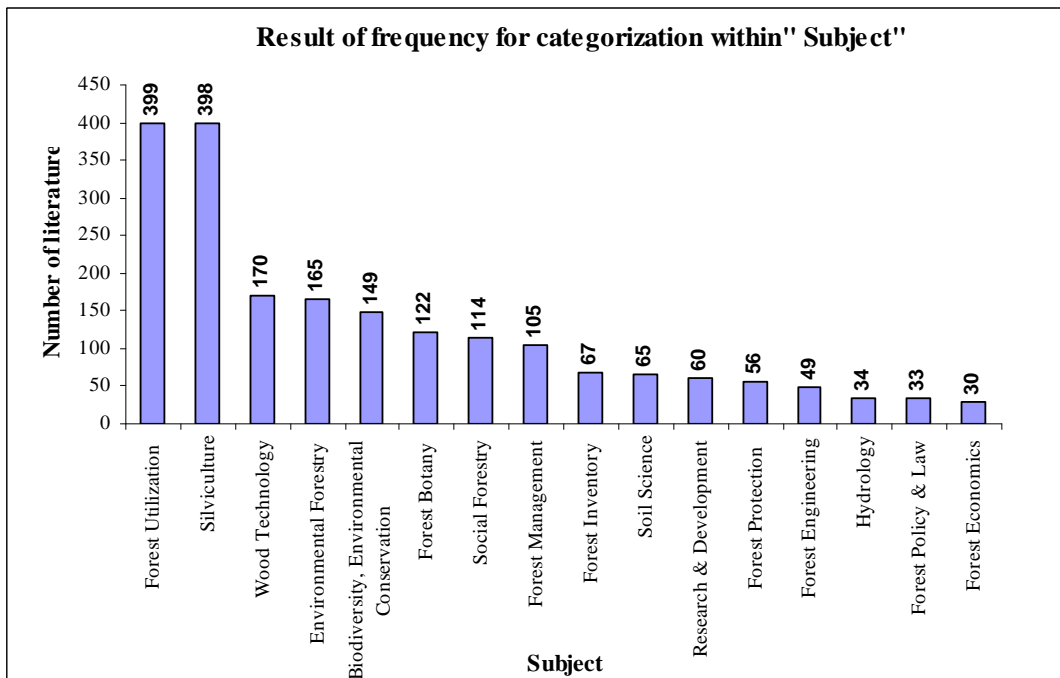


Figure 2. Result of frequency for categorization within subject.

6.3. Imperatives of the forest policy

According to the analysis of information study by six imperatives of forest policy, “sustainability” was superior with (793) followed by “Efficiency” with (615). The number of “Basic Needs” and “Protection” were found similar with (295) and (234) respectively as presented in figure 3 and appendix 3.

Result revealed that there were few forestry related literature to support people participation “PP” and People awareness “PA” in this study. It is suggest that more research and article concerning “PP” and “PA” should be encouraged in near future.

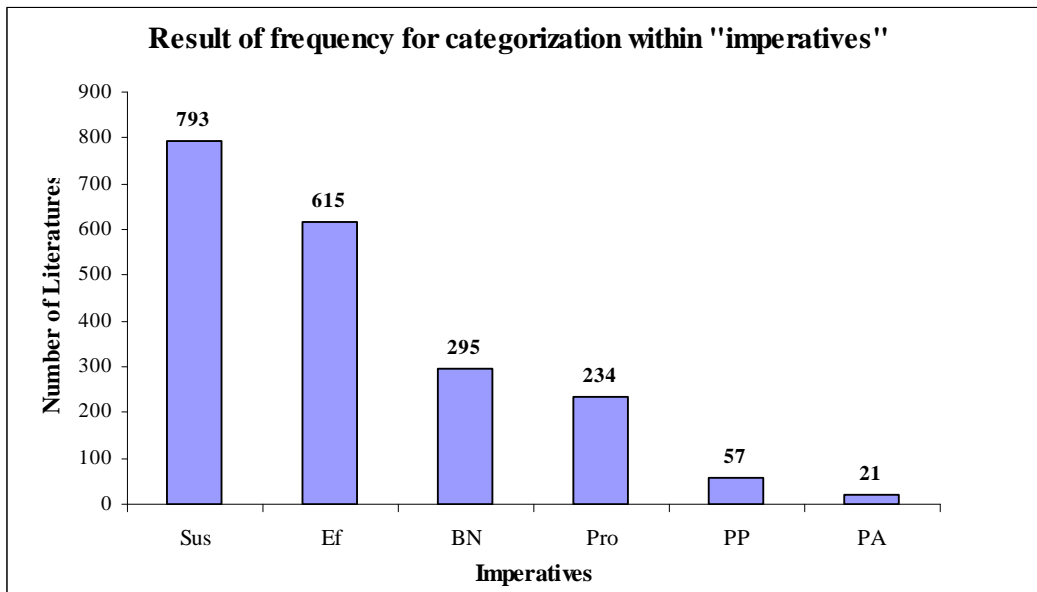


Figure 3. Result of frequency for categorization within six imperatives.

6.4. NFMP

The result revealed that the highest number of records were observed in “Research and Development” (436) followed by “Natural Forest Management” is (284) and “Forest Plantation” (225) records in National Forest Master Plan. Literatures for “Monitoring and Evaluation” was found out poorest in NFMP as presented in figure 4 and appendix 4.

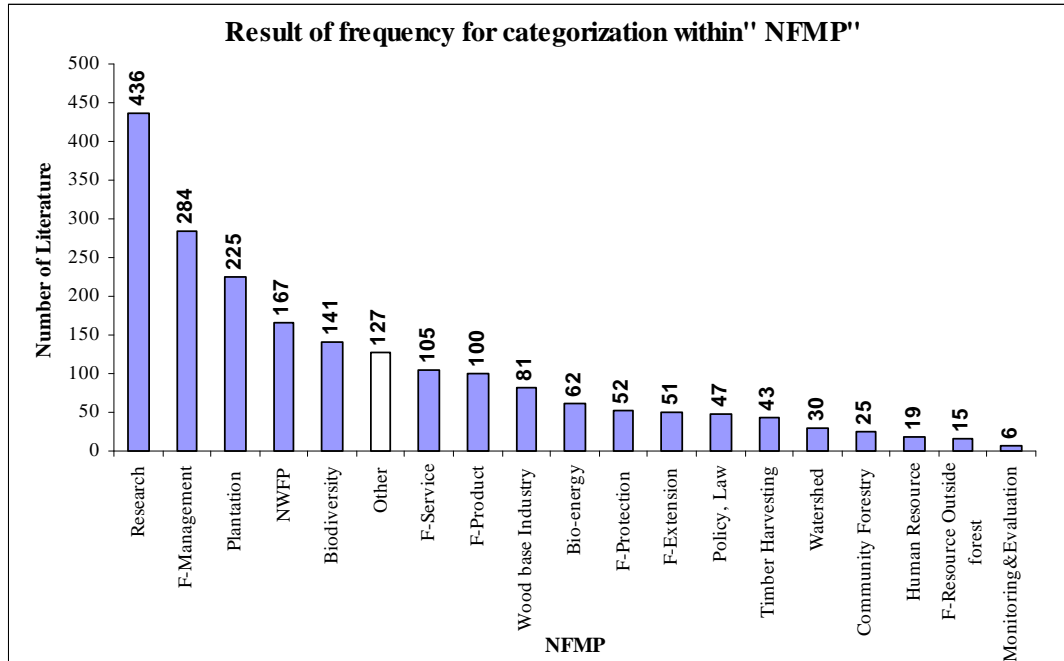


Figure 4. Result of frequency for categorization within NFMP.

6.5. Special purposes of the study

The special purposes of the study, the result presented that “To support Basic Sciences, Education and Technology” revealed superior with (849) followed by “Country’s economy” with (386). The numbers of “Public Extension” and “Energy” were found out with (53), (35) respectively as shown in figure 5 and appendix 5.

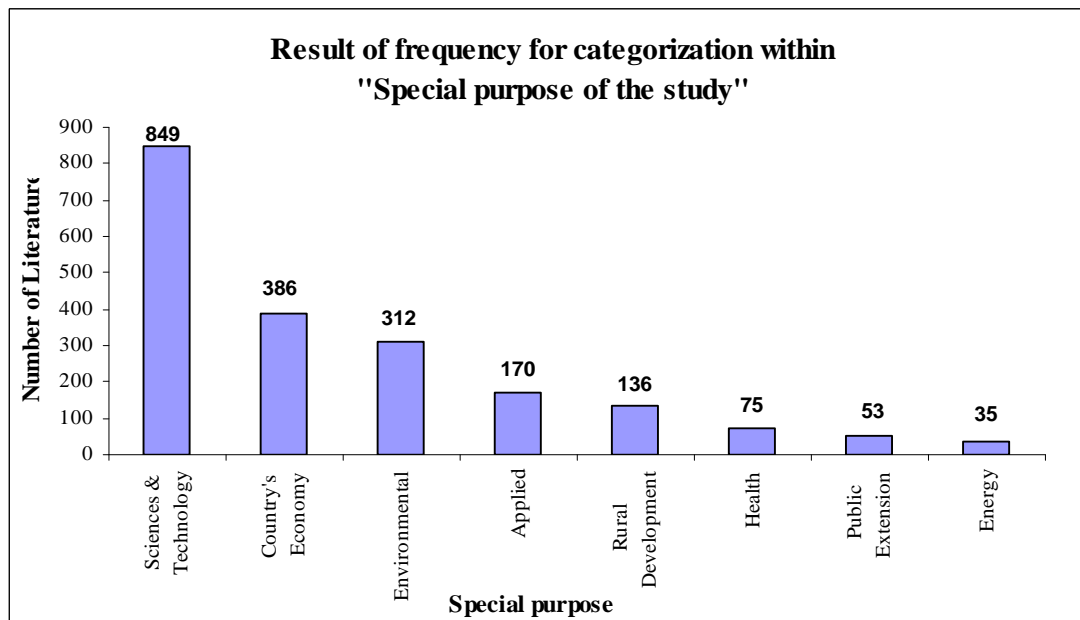


Figure 5. Result of frequency for categorization within Research objectives.

In this paper, all literatures were initially collected from (25) different sources and the number of literature from each source as shown in figure 6 and appendix 6.

Regarding to the sources of literature, FRI library, of courses, was found one of the centre collecting greatest number of forestry related literatures.

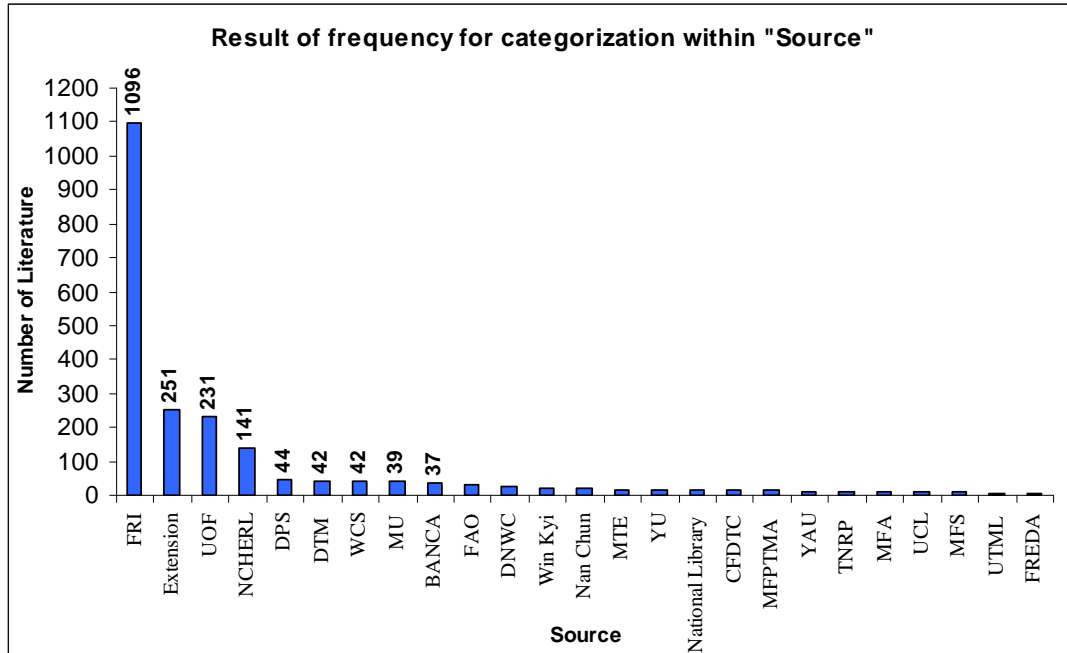


Figure 6. Result of frequency for data collection from sources

7. Conclusion

This study was based on (2800) collected literatures from (25) different sources and presented premature-results and findings within the limited time.

- (i) For “Type” of the literature, articles and research papers were found superior than other types. Literatures from “Master of Arts and Diploma” were unexpectedly found the poorest in type of literature.
- (ii) For major forestry subject, literatures in forest utilization and silviculture were obviously examined the most while literatures of forest economic showed the least in this study.
- (iii) Imperatives of the forestry policy, literatures in line with sustainability were found the greatest number due to the urgent needed to fulfill the current situation of forestry sector under the guidelines of UNCED.
- (iv) Under the chapters of NFMP, literatures for research stood first and followed by forest management and plantation while literatures concerning the monitoring and evaluation was observed the last in this study.
- (v) Literature supporting science, education and technology revealed in highest position than other objectives of the study.

- (vi) Observing the number of literatures from each source, Ministry of Forestry needed to encourage and facilitate other institutions to be related more in the field of forestry in near future.
- (vii) Research team under the supervision of FD is also necessary to emphasize the further development of forestry-information-update in FRI.

8. Recommendation

This research was a pilot survey on collecting forestry related literatures as a **first-step**. Based on findings, conclusions were prematurely presented in this paper for the time being. During the presentation, discussions and suggestions would be welcome for further development of forestry information update in FRI in near future.

Acknowledgement

First of all, our thanks are given to Dr. Nyi Nyi Kyaw, Director of Forest Research Institute for his supports to conduct this research.

We wish to express our gratitude to all departments and enterprise under the ministry of forestry for their participation in this study and to Department of Traditional Medicine, Ministry of Health. We also special thanks to Librarians of National Library, FAO Library, New Century Higher Education Reference Library, University of Central Library, Mandalay University Library, Yadanabon University Library, University of Forestry, Yezin Agricultural University Library and all staff members for their valuable help for data collection.

And we would like to express our deep appreciation to U Win Kyi, Retired Rector of UOF, and members of non-government organizations, such as FREDa, BANCA, WCS, MTP, MFA, TNRP and all of their staff for their great help to complete in data collection .

Thanks are extended to Dr. Nyan Htun , Vice President of Myanmar Academy of Agricultural, Forestry, livestock and Fishery Sciences for his valuable advice, U Soe Myint, Retired Rector of University of Pakokku, Daw Yi Yi Han and Daw Khin May Lwin and Daw Wai Wai Than, Research Officer of FRI, and U Aung Zaw moe, Daw Mu Mu Aung, Assistant Research Officer of FRI for their works on identifying concerned subjects.

Last but not the least, our thanks are conveyed to our library-family, Ma Su Myat Nandar Linn, Mg ZarYar Myo Latt and Ma Hnin Nu Wah, their untiring assistance to finish this research work.

References

1. C.T.S, Nair,1998. Strengthening Research at the Forest Research Institute, Yezin, Myanmar: AN Interim Report, Bangkok, FAO.
2. Cambridge University, 2005. Cambridge Advance Learner's Dictionary.
3. Jose I. dos R. Furtado,2006. Policy and Institutional, Organizational, and Entrepreneurial and Managerial Capacity for forest research in Myanmar: Appraisal for Development: Final Report, Project TCP/MYA/ 3003.
4. Mary E.Jackson, 2006. Changing Global Book Collection Patterns in ARL Libraries. University of California, Los Angeles.
5. Ministry of Forestry, NCEA, 1997. Myanmar Agenda 21.
6. Ministry of Forestry, 1996. Myanmar Forest Policy:1995, Policy Statement.
7. Quiao quiao Zhang. Dr. 1997. Review of Forestry Research Information System in Myanmar. Bangkok, FAO.
8. Ral Lan Sum, 1989. Forest Research Institute, Yezin, Burma.
9. Saw Han, 1994. Introduction to the Forestry Sector.
10. Than Myint, Khin Zaw, Uga, Nyan Htun, Dr. 2001. Upgrading Forestry Education in Myanmar. Yangon, Academy of Forestry Science.
11. သစ်တောဦးစီးဌာန၊ ၂၀၀၃။ တောအုပ်လက်စွဲ။
12. သစ်တောရေးရာဝန်ကြီးဌာန၊ ၂၀၀၁။ အမျိုးသားသစ်တောကဏ္ဍ ပင်မစီမံကိန်း (၂၀၀၁-၂၀၀၂ ခုနှစ်မှ ၂၀၃၀-၂၀၃၁ ခုနှစ်ထိ) အတွဲ(၁)၊ အတွဲ(၂)

Result of frequency for “Type”

Sr.No.	Type	Code	Quantity
1.	Article	At	545
2.	Research Paper	RP	456
3.	Term Paper	TP	233
4.	Book	B	224
5.	M.Sc	MS	210
6.	Technical Document	TD	193
7.	Ph.D	PD	48
8.	Lecture Notes	LN	42
9.	Documents	D	33
10.	M.Res	MR	17
11.	Master of Arts	MA	12
12.	Diploma	Dip	2

Result of frequency for forestry “Subjects”

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
1.	A	Silviculture			46
			A1	Nursery	21
			A2	Plantation	195
			A3	Natural Forest	116
			A4	Agroforestry	20
		Total			398

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
2.	B	Forest Management			66
			B1	Natural Forest Management	36
			B3	Monitoring and Evaluation	3
		Total			105

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
3.	C	Forest Protection			18
			C1	Forest Fire	2
			C2	Pest & Disease	16
			C3	Insect	17
			C4	By Human	3
		Total			56

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
4.	D	Forest Utilization			74
			D1	Timber	75
			D2	NWFP	100
			D3	Medicinal Plant	47
			D4	Extract	22
			D5	Energy	58
			D6	LUS	23
		Total			399

Appendix (2)

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
5.	E	Wood Technology			51
			E1	Timber Physic	39
			E2	Chemical	13
			E3	Anatomy	63
			E4	Morphological	4
		Total			170

Sr.No.	Code	Main Heading	Sub-code	Sub Heading	Quantity
6.	F	Forest Inventory			26
			F1	Mensuration	11
			F2	Survey	13
			F3	Remote Sensing & GIS	17
		Total			67

Sr.No.	Code	Main Heading	Sub-code	Sub Heading	Quantity
7.	G	Social Forestry			38
			G1	Community Forestry	24
			G2	Extension	34
			G3	Socio-Economics	18
		Total			114

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
8.	H	Biodiversity and Environmental Conservation			39
			H1	Plant Conservation	16
			H2	Animal Conservation	94
		Total			149

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
9.	I	Soil Science			65
		Total			65

Appendix (2)

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
10.	J	Hydrology			14
			J1	Watershed	20
		Total			34

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
11.	K	Forest Engineering			21
			K1	Harvesting	25
			K2	Milling	3
		Total			49

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
12.	L	Forest Economics			30
		Total			30

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
13.	M	Forest Policy & Law			17
			M1	Instruction	10
			M2	Education	6
		Total			33

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
14.	N	Forest Botany			56
			N1	Taxonomy	12
			N2	Dendrology	1
			N3	Tree Improvement	53
		Total			122

Sr.No.	Code	Main Heading	Sub- Code	Sub Heading	Quantity
15.	O	Environmental Forestry			165
		Total			165

Sr.No.	Code	Main Heading	Sub-Code	Sub Heading	Quantity
16.	P	Research and Development			60
		Total			60

Source: (U Than myint, *et.al.*, 2001)

Result of frequency for six imperatives of forest policy

Sr. No.	Imperatives	Code	Quantity
1.	Sustainability	Sus	793
2.	Efficiency	Ef	615
3.	Basis Needs	BN	295
4.	Protection	Pro	234
5.	People Participation	PP	57
6.	Public Awareness	PA	21

Result of frequency for categorization within “NFMP”

Sr. No.	NFMP	Code	Number of sample
1.	Forest Research and Development	16	436
2.	Natural Forest Management	3	284
3.	Forest Plantation	4	225
4.	Non-Wood Forest Products	13	167
5.	Biodiversity Conservation	8	141
6.	other	19	127
7.	Forest Services	2	105
8.	Forest Products – Marketing	11	100
9.	Wood Based Industries	10	81
10.	Bio-energy	12	62
11.	Forest Protection	5	52
12.	Forest Extension	17	51
13.	Policy, Law, Infrastructure	1	47
14.	Timber Harvesting	9	43
15.	Watershed Management	6	30
16.	Community Forestry	7	25
17.	Human Resource Development	15	19
18.	Forest Resources Outside the Forest	14	16
19.	Monitoring and Evaluation	18	6

Result of frequency for special purpose of the study

Sr.No.	Special purpose	Code	Quantity
1.	To support Basic Sciences, Education, Technology	1	849
2.	Country's Economy	5	386
3.	Environmental	4	312
4.	Applied	2	170
5.	Rural Development	6	136
6.	Health	7	75
7.	Public Extension	3	53
8.	Energy	8	35

Collection area of forestry related organization

Sr.No.	Collection Area	Source	Quantity
1.	Forest Research Institute	FRI	1096
2.	Extension of FD	Extension	251
3.	University of Forestry	UOF	231
4.	New Century Reference Higher Education Library	NCHERL	141
5.	Division of Planning & Statistics	DPS	44
6.	Department of Traditional Medicine	DTM	42
7.	Wildlife Conservation Society	WCS	42
8.	Mandalay University Library	MU	39
9.	Biodiversity and Nature Conservation Association	BANCA	37
10.	Food and Agriculture Organization	FAO	33
11.	Division of Nature & Wildlife Conservation	DNWC	24
12.	U Win Kyi (Retired Rector, UOF)	Win Kyi	23
13.	Nan Chun Training School (1)	Nan Chun	22
14.	Myanmar Timber Enterprise	MTE	16
15.	Yadanabon University Library	YU	15
16.	National Library	National Library	14
17.	Central Forestry Development Training Centre	CFDTC	13
18.	Myanma Forest Products & Timber Merchants Association	MFPTMA	13
19.	Yezin Agriculture University library	YAUL	12
20.	Myanmar Floriculturist Association	MFA	12
21.	Taninthayi Nature Reserve Project	TNRP	11
22.	University of Central Library	UCL	9
23.	University of Traditional Medicine Library	UTML	7
24.	Myanmar Forest School	MFS	5
25.	Forest Resource Environment Development & Conservation Association	FREDA	3

List of Acronyms

BANCA	Biodiversity and Nature Conservation Association
CFDTC	Central Forest Development Training Centre
CID	Cottage Industries Department, Ministry of Cooperatives
DAP	Department of Agricultural Planning, MOAI
DNWC	Division of Nature and Wildlife Conservation
DPS	Planning & Statistics Division
DTM	Department of Traditional Medicine
FAO	Food and Agriculture Organization
FREDA	Forest Resource Environment Development and Conservation Association
FRI	Forest Research Institute
LBVD	Livestock Breeding & Veterinary Department, MLF
MAAFLFS	Myanmar Academy of Agricultural, Forestry, Livestock & Fisheries Sciences
MAS	Myanmar Agriculture Service, MOAI
MFA	Myanmar Floriculturist Association
MFPTMA	Myanmar Forest Products & Timber Merchants Association
MFS	Myanmar Forest School
MLF	Ministry of Livestock & Fisheries
MPCE	Myanmar Perennial Crops Enterprise
MPCI	Myanmar Paper & Chemical Industries, MOI1
MTE	Myanmar Timber Enterprise
MU	Mandalay University Library
NKBG	National Kandawgyi Botanic Gardens, DNWC
NCHERL	New Century Higher Education Reference Library
SLRD	Settlement & Land Records Department, MOAI
TNRP	Taninthayi Nature Reserve Project
UCL	University of Central Library
UOF	University of Forestry
UTML	University of Traditional Medicine Library, Mandalay
WCS	Wildlife Conservation Society
WRUD	Water Resources Utilization Department, MOAI
YAUL	Yezin Agricultural University Library
YU	Yadanabon University
YZ	Yangon Zoo, DNWC