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Laying paving stones for a knowledge society: Community Information Literacy (CIL) and an analysis of barriers to upgrade CIL in rural Sri Lanka*

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Abstract

It was identified by many scholars and researchers, Information Literacy (IL) as a compulsory requirement in modern citizenship to attain development in modern terms of reference. The paper is based on a sample survey conducted in rural areas of Sri Lanka. The paper attempts to identify components of IL concept and tries to buildup an Information Literacy Model relating to rural communities. It was able to derive through the survey, factors that affect the level of IL. Competency level of IL not only depends upon language literacy or on conventional education system, but on other social factors as well. The paper specifically tries to identify the barriers that affect adversely to those determining factors of IL, where as causing Information Illiteracy among rural citizens. The survey also had helped to identify possible structural and alternative proposals to propagate Community Information Literacy among rural communities. The paper establishes the fact that Information Literacy is a 'living concept', as phases of IL and factors that affect to its behaviour changes person to person and environment to environment.

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1.0   Information society to knowledge society

In any society, whether traditional or modern, an information flow exists and has a shape and behaviour according to the embedded values in that particular society. The rural areas investigated in the survey, are also embedded with their own information flow. In some cases they were very traditional but a mixture of both traditional and modern nature is seen in another. It was observed that when it comes to the modern information behaviour, some obstacles exist as barriers for smooth and effective flow of information. One barrier that was emerged through the study was 'low level of information literacy' even though the language literacy counts a higher rate in Sri Lanka including rural areas. As was identified by many scholars and researchers, Information Literacy is a compulsory requirement in modern citizenship to attain development in modern terms of reference. Mchombu identifies literacy as a basic need of the rural community that is to be supported by community centres in gaining rural development (Mchombu,1996).

Information is treated as an essential element in the development process at present. Information is generated at every corner of the world in an unprecedented rate and rapid strides are being made in technology for storing, organizing and assessing the information produced. The combined effect of these factors is, larger component of information is mostly available only to people with infrastructure facilities or with acceptable institutional affiliations. In the recent past the outcome of these challenges has been characterized as the 'digital divide', which is treated as a barrier standing on the way to the knowledge society. If the digital divide stands as a barrier, one important requirement to overcome the situation is upgrading information literacy of the citizenship. A knowledge society is "..a society which is well informed and knows how to use information for the betterment of that society." (Todd, 2001).

2.0   Introduction to Information Literacy

It is important to understand the difference of two concepts, 'information seeking behaviour' and 'information literacy'. It is seen that the standard steps identified in the two processes are almost identical. The difference of these two concepts is, former deals with steps followed physically by an information seeker, while the latter deals with the knowledge need to use the steps in the former process effectively.

There are many definitions for the term 'information literacy'. The most comprehensive is that of the American Library Association, which defined the concept as,

> "a set of abilities requiring individuals to recognise when information is needed
> and have the ability to locate, evaluate, and effectively use that information for
> the issue or problem at hand" (NFIL & ALA-PCIL,2003).

Information Literacy directly deals with competency level of using set of information skills. The concept of information literacy emerged through US and Australian education

theory and librarianship. Extensive work has been done in pedagogical settings but is relatively a recent concept in other working environment and in citizenship levels. When driving towards knowledge society, information literacy (IL) is identified as the most important requirement that is to be achieved. According to Canning;

> "IL is the ability to find, evaluate and disseminate information using traditional, currently available and evolving technologies for the purposes of investigation, education and the solving of real world problems"(Canning in Moore, 2002)

IL is central to most of the other skills. As Denis Ralph adopts from Bruce's model, IL is not a concept which stands alone, but is a central skill contributed by other supporting skills (Ralph,1999). According to Ralph, Information skills, computer literacy, IT literacy, library skills and learning to learn contributes to IL. Many other authors and researchers of information seeking behavior had contributed to the concept with greater insight into the theory of learning

Theories and models established in the scope of information skills, information retrieval /searching process and behavioural theories of information seeking were earlier developed upon learning theories. For instance Blooms Taxonomy of Learning Outcomesintroduced in 1956 (Bloom 2003),is still being used as base for analyzing learning levels. Later many concepts and models were brought forward by information scientists and educationists relating to information seeking process and information seeking behaviour. Tom Wilson's information seeking behaviour and information behaviour models (Wilson,1999), Kuhlthau's models of information seeking behaviour (Kuhlthau,1991,1998 & Kuhlthau-home page, 2004), Big 6 model of information seeking levels developed by Eizenberg and Berkovitz (Eizenberg & Berkovitz 1990 & Big6^{TM} -home page 2004) using Kuhlthau's model as base, Bruce's relational model of Information literacy (Bruce,1997 & Bruce –home page 2004), theory of 7 pillars of Information Literacy skills (or 7 headline skills) developed by SCONUL (Society for Collage and University Libraries) in UK based on Bruce's model (SCONUL, 1999), EXIT Model of Ontario School of Library Association, dealing with college level student literacy level(OSLA,1999), Ralph model of information literacy with its contribution to other types of literacy (Ralph, 1999), Penny Moores 6 stages of information problem solving(Moore 2002)etc. are leading among many theories, models and standards published.

The concept has different angles of interpretations when deals with different environments, embedded with specific characteristics. For instance IL for pedagogical environment is different from workplace or adult literacy issues. Management of a workplace also looks at the 'information literacy' in different angle, i.e. knowledge management perspective, (Winterman,Skelton & Abell 2003, TFPL,1999) than the way an academic authority looks into the concept which is relating to a teaching and a learning environment. Unilever UK Ltd. had also established a research function within their organization with the view of upgrading information literacy among the staff with emphasis to knowledge management (Donnelly & Craddock,2002).

Not only the individual researchers, but many committees, societies and associations are at the task of drawing out IL standards customizing general theories for their own nationality. Especially the library associations and related committees works on the concept as a strategy for information skills teaching, and task forces and committees appointed by academic authorities are working on the concept as a learning strategy. SCONUL, in UK (Town,J.S. 2002), Council on Australian Universsity Libraries (CAUL,2001),American Library Association- Association of College & Research Libraries, International Fedearation Library Associations, (people.mills.edu/cmaybee /ILresources.htm, 2004)

IL concept deals with a series of human activities or behavioral patterns, which changes from person to person or environment to environment. The boundaries of literacy frames established pertaining to literate and technological communities, sometimes shatter when it comes to illiterate, remote very ordinary citizens especially in rural areas. So that in relation to the rural citizenry, IL analysis should carry a deep insight into very basics of human thinking and understanding existing within that community, which is very much guided by the socio-cultural, socio-economic and other embedded values of the community they belong as well as the values added externally to a person in the society, such as education, economic activities, living styles etc.

3.0   Survey design and methodology

The research study was on information need categories, behavioral patterns of information seeking of rural communities and information behavior it self in rural Sri Lanka. This paper is based on the data and information derived from the baseline survey conducted in 10 villages selected through systematic and non- systematic samples. The samples were derived through 'Multistage Cluster Sampling' method. A mixture of socio-economical, socio-political and socio-technological differences was seen across the samples of so-called rural and semi-rural community clusters selected. There were two categories of samples selected, one from the 'rural community' (including upcountry, low country rural, estate and fisheries communities), and other sample from the 'information providers' operated in the areas surveyed.

Data used for the analysis of IL obtained from qualitative and quantitative data collected through the community sample. Facts collected from the information providers are used for recommending alternative solutions to upgrade the IL level in rural areas. The total number of house holds interviewed was 310 (village population x 15%) to derive a manageable sample as the survey is being conducted for a personal study (see footnote *, p.1). Data collection tool used was 'structured interview', but a few talkative and dynamic respondents were selected and encouraged to give their ideas openly relating to the topics focused. The general interview style used was Dervin's 'Sense Making Approach' as most of the subjects in the population consist of remote and backward communities who are normally reluctant to speak openly and are generally bashful. Response rate of the survey was 100% due to the collection method utilized.

4.0   Scope of the paper and conceptual framework

Scope of the paper deals with adult literacy, that is a necessarily skill for life long learning. The study expects to look into elements of IL concept and their behaviour with respect of information literacy level of rural communities in solving information problems, which encounter during their daily activities. As established through the survey these communities have a lot of complexities in education, employment, economic activities, standard of living and other social involvements. Hence, the paper concentrates on 'Community Information Literacy'- CIL, which is treated as an essential requirement for any citizen to be a rightful and informed citizen.

Among the many conceptual frameworks mentioned above on IL, the paper uses IL standards set forth in the "Prague Declaration" (UNESCO,NCLIS,NFIL,2003) to develop CIL Frame for rural communities. It is sail that ICTs have only increased the divide between the information rich and information poor. Prague participants acknowledged the need for three elements to improve this situation.
1) ready access to ICTs
2) unrestricted availability of needed information and
3) an information literate citizenry

They agreed that an 'information literate citizenry' is required to mobilize an effective civil society and create a competitive work force. Participants declared that IL is a basic human right for Life Long Learning. According to the declaration Information Literacy was defined as ability to identify, locate, evaluate, organize and effectively create, use, communicate information to address an issue or problem at hand (UNESCO, NCLIS, NFIL, 2003). See Fig. 1 for Prague IL frame.

IL is :
          an ability to;
                    Identify
                    Locate
                    Evaluate
                    Organize

          and Effectively;
                    Create
                    Use
                    Communicate
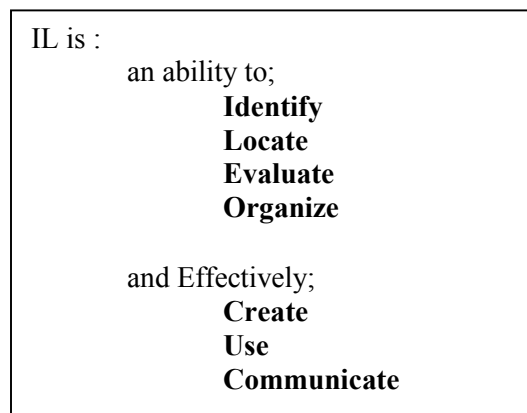
Frame 1
Prague IL Frame

The abilities mentioned in this frame are the skills required to gain by an information literate person in general, who will be able to incorporate knowledge contain in an information source to their work or for needs in their day-to-day activities. According to Zurkowski,

People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information solutions to their problems" (Zurkowski in Spitzer, Eizenberg & Lowe, 1998.p.6)

Therefore people are to be trained to be information literates unlike obtaining language literacy through formal education. These set of skills as mentioned in the Prague frame change, from environment to environment, person to person depending on impact level of some factors revealed in the study, such as personal status, intelligence level of person, information access systems established, infrastructure issues etc. Likewise, information literacy level also tends to change.

Prague IL frame do not stick to a category of people or community in particular, but talks about the need of information literate citizenry at large. The frame (Prague IL frame) is used as the base concept in building rural Community Information Literacy model.

5.0   Information Literacy Assessment

IL is one important aspect that was hoped to analyze through the main study. Only the datasets that are relevant to analyse IL of the communities considered were taken into consideration in this paper to assess IL and method of assessment followed is mentioned below.

- Taking conceptual framework of IL into consideration, it was tried to draw a specific frame of Community Information Literacy (CIL).
- The study conducted was in descriptive nature on micro aspects of information needs and information behavior, so that, it was attempted to identify factors that are influencing positively and negatively for the IL level of rural communities.
- It is hoped to identify barriers that stand as obstacle to upgrade IL of rural people and recommend possible solutions.

5.1   Variables derived through the survey

A Pilot Survey was conducted in a traditional village as a first of the survey. For this pilot study, concepts in 'Prague IL frame' were used to measure IL abilities rural people. According to the situations and complexities of the communities studied, it was identified few more situations as variables other than the variables mentioned in the Prague frame. Those new variable identified were incorporated when conducting main survey.

The specific situations observed during the main survey other than the concepts mentioned in the Prague IL frame were;

a) **Lack of or no awareness about an information gap - conception of the need of information** – about 78% of the respondents interviewed are not known whether an information need had arisen. Out of 78% of the

respondents about 15% thought (most of them were older people) that what they know was more than enough to lead the rest of their lives.

b) **Lack of or no understanding about obtaining information and no knowledge as to how an information gap can be closed by accessing to information sources.** About 30% of the respondents have not communicated the need to any proper information provider or channel except to his members of own household or close relatives. About 20% contacted the neighbor, again not sure about whom to be contacted to obtain information. About 18% use knowledge what they already have or as a habitual practice, hence accurate information was not reached by them. About 18% depend upon radio or TV, again no comprehensive coverage on all sorts of needs was fulfilled and due to listening habits. 14% did not express the need to obtain information to anybody or confused about obtaining information.

c) **Lack of or no awareness about the usability, practicality or appropriateness of information (Evaluation of information)** – The measurement of this concept highly varied according to the need category. The respondents, before use, were always evaluated some categories of information, which were long associated with the respondents such as employment related, economic activity related or vocation related. But some information which were not used much or not very familiar to them, were not been evaluated by them due to lack of conversancy or knowledge on the same. Hence about 65% of the respondents were mentioned that they were 'misleaded' in obtaining information, which indicates the respondents have no stability to evaluate information. It was only 15% told that information is not comprehensive enough to use or not practical. Rest gave different reasons like 'unclear information', 'not sure' etc.

d) **Lack of knowledge about information exchange or information transfer.** The response again highly varied according to the information category. They exchanged the information much familiar to them informally, at day today chats, at village shop etc. Some information like health related, industrial aspects, education and training, government information, financial, legal etc. were rarely transferred at village level, but a person who obtained it directs the other to a possible channel where the required information could be obtained at many instances.

These characteristics and of the communities identified (a, b, c and d above)are summerised in the Table 1 and are expected to use as other essential skills that needed for a person to be information literate be in IL frame when drawing the CIL model.

Base Skill	Components (are the Variables used in the analysis)
(a & b) Prior knowledge about information need	1. Awareness and knowledge about that an information need has arisen 2. Awareness on that there is an Information gap 3. Awareness on that Gap can be closed through information
(c)Effective usage of information	Understanding usability /practicality of information once obtained
(d) Communication	4. Communicate or guide others on the same problem

Table 1
Variables incorporated newly into CIL Frame

The left column of the table depicts the base element and components of base element arein the right column.

5.2   Community IL Model

Though existing theoretical framework was used as the base, there were country specific and location specific characteristics that were incorporated in to the model as mentioned in sec.5.1, Table 1. See Table 2 for the list of integrated variables (Skills) that will be used to draft CIL frame.

Base Skill	Components (Variables used in the analysis)
Prior knowledge about the need for information(**BK**)	1) Awareness and knowledge about that an information need has arisen (**KI**) 2) Awareness on that there is an Information gap(**IG**) Awareness on that Gap can be closed through information(**GC**)
Information needs (**IN**)	3) Identify the categories of information needs (**IC**
Information Seeking (**IS**)	4) Location of channels to reach information source(**IL**) 5) Methods of approaching /obtaining the information (**IS**)
Effective usage of information (**EI**)	6) Understanding usability /practicality of information, once obtained- Appropriateness (**IP**) 7) Use of information (**IU**)
Communication (**CI**)	8) Information Transfer -(**IT**) 9) Information Exchange – (**IX**) (Communicate or guide others on the same or related problem)

Table 2
Variables considered in the survey

It was tried to incorporate situations and complexities observed through the survey as much as possible into the variable schedule. In Table 2 there are 5 base skills used as

variables in CIL formula given in Formula I and 10 sub variables (see right column), which will be used to frame CIL model in Frame 2 below.

The skills identified depict how the phases of the IL process behave as variables in IL. In turn, the composition of steps explains, how an ordinary person behaves when an information need had arisen. A mathematical expression is also tried to formulate to depict variables that determine the CIL as mentioned below.

$$CIL = f(BK), f(IN), f(IS), f(EI), f(CI)$$

→ *Formula I*

Where,   CIL = Community Information Literacy

BK   = Base knowledge about the need
IN   = Information Need category
IS   = Information Seeking Behaviour
EI   = Effective Usage of Information
CI   = Communication of Information obtained

And,   *BK   = KI+IG+GC*
IN   = IC
IS   = IS + IL
EI   = IP + IU
CI   = IT + IX

Where,   KI,IG,GC,IC,IS,IL,IP,IU,IT,IX   are equal to the descriptions available for each variable in right column of the Table 2.

The CIL is a composite of functions of individual elements and not a function of all the elements (CIL=f(BK…CI)). The model designed for the CIL level is given below in Frame 2, using 10 variables mentioned in Table 2.
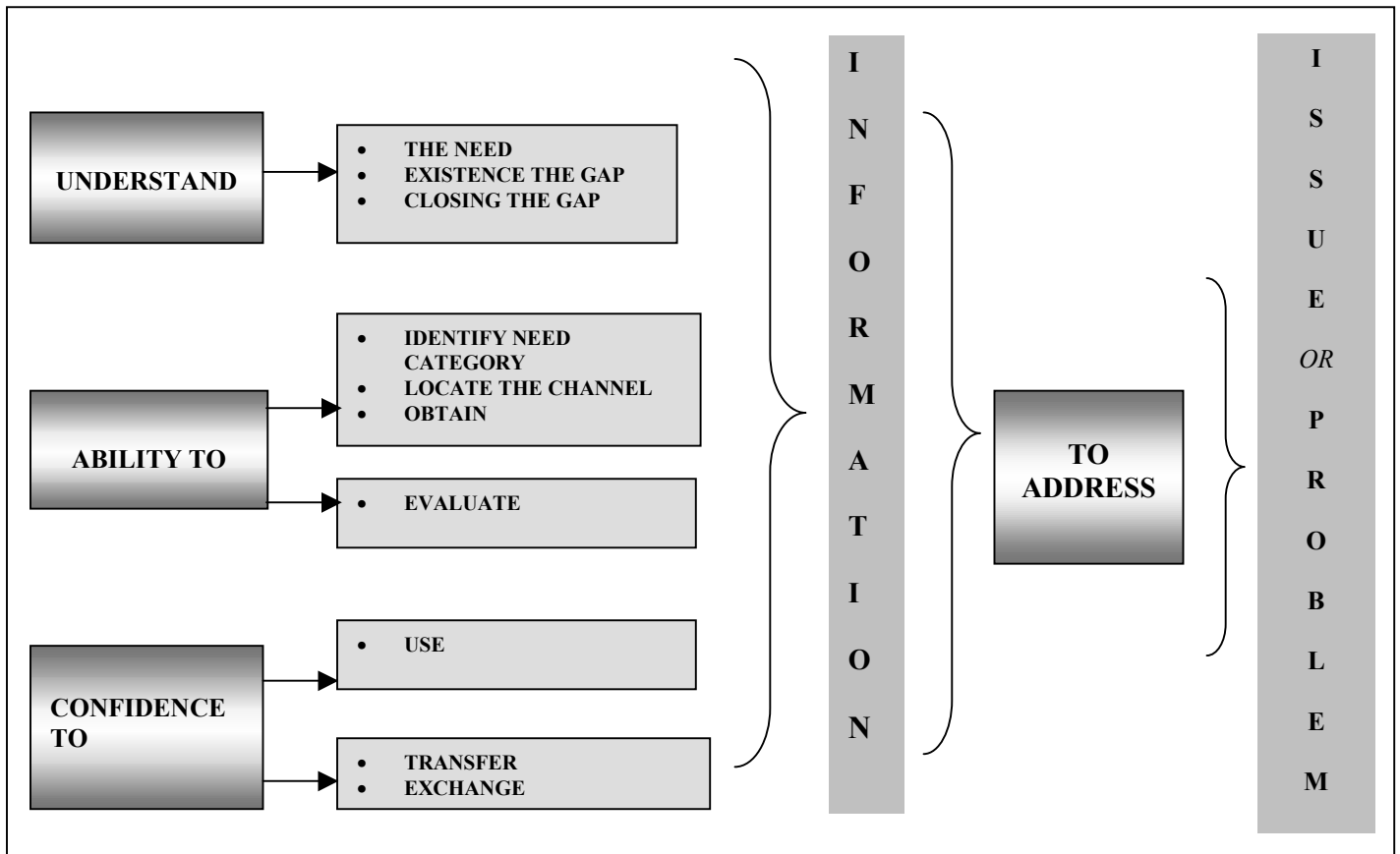
frame 2
Community Information Literacy(CIL) – Behaviour of CIL Variables

The model indicates how the skill levels of CIL behave when information an problem is encountered. According to the model an information literate citizen should have the following skills to handle information problems and issues.
The information literate person;
    should be able to understand;
        1. that he is having an information need
        2. that there is gap in his knowledge
        3. that he has to close the gap by obtaining information.
    should have the ability to;
        4. categorise the need he encountered
        5. locate through which channel or route he has to reach the information
        6. how to approach and obtain the information source.
        7. ability to evaluate the information obtained for its, usability and appropriateness.
    should have confidence to;
        8. use the information obtained
        9. transfer the information obtained to another person

10. exchange the information obtained with another.

5.3   Factors affecting the Information Literacy level of a person

The survey was designed to collect information on information needs and their information seeking behavior regarding different categories of information, e.g. government information, agricultural information, health information, industrial information etc. Since the study hopes to identify barriers that affect the IL level, first it is needed to identify factors affecting the IL level. The study had revealed that there were certain conditions that affect the level of personal information literacy, namely the educational level of a person, employment category he belong to, economic activity engaged and sort of training obtained for a vocation.

Data obtained in the survey from respondents whose knowledge levels that were counted as 'high' are summerised in the Table 2 below.

Factors Affecting CIL / Variables of CIL	Education level % of total sample *el*					Employment category-% empd. respndts- *ec*				Econ.Acty Engaged-% of eco. active respndts - *ea*			Training recd. -% of people rcvd. Training -*ve*		
	N	PU	O	A	H	G	P	S	N	Tm	Ag	V	F	I	Tr
1. Aware Info.Need	48	49	60	60	88	90	88	88	70	40	60	70	80	70	70
2. Aware Info Gap	30	31	30	45	82	92	78	90	78	30	80	80	80	60	80
3. Aware to Close Gap	10	18	25	38	95	95	78	90	78	10	79	72	80	55	74
4. Identify Info.Cat.	05	05	10	15	98	98	88	88	75	05	75	55	70	65	50
5. Location channels	10	10	10	15	98	98	88	88	75	05	75	50	60	60	60
6. Obtain information	02	05	05	08	90	98	88	88	10	02	60	48	35	38	41
7. Evaluate usability	02	05	05	08	98	98	80	80	03	04	70	58	70	64	70
8. Information use	20	30	40	38	98	98	85	87	10	20	98	98	88	65	54
9. Information transfer	00	02	00	02	70	60	08	01	06	02	75	09	25	16	10
10.Information exchange	00	01	00	00	06	14	05	00	00	00	62	69	56	40	36

Key:

A=G.C.E. Advance Level Ag= Agriculture F= Formal training	G=government H=Higher education I= Informal training N= Nil/None	O= G.C.E. Ordinary level P=Private sector PU=Primary / below O/L S=Self employment	Tm=Temporary work Tr= Trained through family tradition

Table 2 - Factors affecting IL level
Percentage distribution of respondents showed 'High Knowledge' level

The situations observed are estimated as percentages against the CIL elements derived from the CIL Frame 2. As Drucker points out acquisition of knowledge will no longer depend upon obtaining a prearranged education at any given age (Drucker,1994). The fact is true as was observed in the survey. It was seen that it is not only the formal education which act as the determinant of IL, but there were other factors which had an influence over the IL level of respondents. These facts had acted differently when a person entered into each and every IL phases mentioned in the Table.

Education level, of course had an impact on all 10 CIL skills mentioned in the table. Higher the education level more the efficiency they gained at passing IL stages. On the other hand, what ever the education level, the respondents' employment category and the

economic activity engaged had an influence on IL level. More than 90% of the working people in rural areas surveyed consist of skilled workers or non-executive grade workers both in government and private sector. In the self employment category many were engaged in cottage industries such as incense stick/matches making, dolls/fancy toys making, gold smithy, paper bags/envelope making, poultry, fish/prawn farming etc. People belong to those employment categories showed general efficient level in passing IL phases such as, understanding needs, locating the channel etc. The reasons seen for the situation observed were;

a) connectivity/communication built up with outside environment apart from the community they belong and exposure to new information world

b) opportunity to access many channels than being in the community

c) Assistance received from friends, fellow workers.

It was also seen that, whatever the education level, whatever the sex of the respondents, IL level had an effect from the economic activity engaged by a person. These activities may be agricultural or (paddy cultivation, chena (Unauthorised clearing of crown lands) cultivation, mixed food crops, commercial crops etc.) temporary work relating to a vocation or other work (labourer work, assistance to carpentry, black/brass/copper/ aluminum smiths or other small and cottage industries etc.). The rural people had gained an expertise in the work they constantly engaged. i.e. people engaged with a fixed vocation showed, average 60.9% of 'High Knowledge' in obtaining information relating to their work engaged. It was also seen that IL level changes positively when the respondents already had received a training for some sort of vocation. That is again specific to the activity engaged. See Table 2 above.

Another observation made across the study was the respondents showed different IL level relating to the category of information needs and among the need categories, 'Survival information needs' (Health, Food and Nutrition, Law & peace, Infrastructure, Weather related)some categories of counted higher rank of IL level. About 87% respondents ranked 'High Knowledge', 10% 'Fair Knowledge' level through 10 IL skill levels.

Data on language literacy level also available through the survey. The variables collected on language literacy are ability to read, write and speak the mother tongue. Almost all the respondents' language literacy level was above 75-94% except in the fisheries community (see Table 5 p.15). Hence the literacy level is not considered as a variable inTable 2.

Full analysis of behavior of each an every category of employment or economic activity is not given in this paper due to limited space for a lengthy discussion. However it is tried to give an abstracted picture on, how the IL level changes with the factors built-in within an individual.

These personal factors identified determine the ability to enhance the IL level of a person. When CIL is expressed as a function of those factors derived as mentioned in the table 2, it gives the following expression.

$$\boxed{CIL_f = f(\ el,\ ec,\ ea,\ ve)} \longrightarrow \quad \textit{Formula II}$$

Where,   CIL= Community Information Literacy

sx = sex of the respondent
el = education level of the respondent
ec = employment category
ea = economic activity engaged
ve = vocational expertise

Therefore IL level changes upon the behaviour of the factors observed. Behavior and impact of these factors on IL level changes by the influence they get from geographical, socio-cultural, socio-economic environment they belong. These environmental factors, some are permanently established physically, but some are changeable and can have impact on factors affecting CIL both favourably and unfavourably. The unfavourable environmental factors act as barriers to the CIL level. These barriers are to be identified and categorized before proposing remedial actions to upgrade CIL level in rural communities.

6.0 Barriers that affect to upgrade CIL level

It was tried through the study to identify these environmental factors that stand as barriers to upgrade IL level or to cause Information Illiteracy among rural communities in Sri Lanka. The problems and issues discussed in the paper, relates only the factors that affect as barriers to upgrade IL level of these communities and those were discussed under following headings.

- Geographical barriers
- Structural barriers
  - o Information Infrastructure
  - o Socio-cultural structure
  - o Socio-economic structure

These barriers are external to an individual but are embedded in the environment where an individual belong. Unless external solutions are not made to overcome these situations a person as a citizen cannot avoid these barriers but to live with it. The barriers recognized are interrelated and when discussing certain level of overlapping occur. For instance geographical conditions are to be discussed in relation to infrastructure, so as with economic conditions etc.

6.1 Geographical barriers

Geographical conditions of the areas studied were categorized as mentioned in the Table 3. Following conditions were observed standing as obstacles to develop information literate citizenry.

- o Geo-physical conditions
- o Climatic / weather conditions

Clusters selected for the sample population were from both so-called rural and semi rural areas. Ten clusters were studied. Main geographical areas studied and weather conditions identified and community characteristics and economic activities involved are given in Table 3.

Geo. zone No. of samples	Location	Weather conditions	Economic activities	Nature of villeges
Upcountry wet zone - 02	Hilly, higher elevation (900 - 1500 m)	Cold, Misty, Windy, Constant rain fall	Tea estates, Vegetable growers – Agri. based	**Semi remote**- Traditional
Upcountry dry zone -01	Low hills (150-305m)	Dry, temperate, seasonal rains	Chena cultivation- Agri based	**Remote**- Traditional + settlers
Lowcountry wet zone - 03	Low country (30-150m)	Wet, humid	Mixed crops, Paddy, SMI industries	**Semi remote** Traditional + settlers
Lowcountry dry done - 03	Low country (30-150m)	Dry, seasonal rains	Paddy cultivation. Mixed crops	**Remote**- Traditional + Settlements
Fisheries - 01	Coastal plains	Coastal weather	Fisheries	**Remote**- Traditional

Table 3
Distribution of the Sample among geographical zones

The cluster villages selected for the survey have their own geo-physical features and related social characteristics. It was observed that these communities live with minimum social amenities amidst an unfavorable geo-physical and weather conditions, which made the life uncomfortable to most of the remote communities. Attention paid by the state and provincial authorities are minimum to upgrade standard of living of these rural communities.

Geophysical conditions in rural areas had adverse effects on the lives of people who live within than other sub-urban and semi-rural areas. For instance, hilly mountainous areas in wet zone and remote dry zone villages which are separated from thickets and jungles where wild elephants other wild animals roam freely just after the afternoon and other ordinary rural areas with less roads and transport are adversely affected through the geo-physical conditions. People live in these areas have less than minimum of infrastructure facilities like motorable roads to every corner of the settlement area, no electricity to every house hold, potable water for every person etc. fully or partly because of this geophysical conditions.

Ordinary rights of citizens like schooling facilities from kindergarten to upper school for every child, vocational training or higher education centres, proper information provision from government and from information centres or public libraries, communication centres accessible for all citizens, access to community forums (small group forums in agriculture, industrial and economic activity related, financing issues etc.) obtaining

advisory and financial support for industries, are also lacking in these areas. The condition automatically paves the way to information illiteracy.

The communities live in these areas face difficulties due to weather conditions as well. Cold, misty, rainy hills or dry and extreme hot climate and seasonal natural disasters (floods, drought) make the working day shorter, difficult and troublesome for them. These disadvantages cause to loose chances and opportunities for them in obtaining required knowledge regarding the information they need to acquire. It also bar people from meeting and communicating with their own and outside people regarding to conceive and clarify the information needs, accessing into correct information channels, accessing into the places where information is stored and selecting proper piece of information, obtaining the knowledge to evaluate its appropriateness, use the information obtained effectively, transfer the knowledge obtained to another needy person etc.

These areas are also mostly poverty stricken due to not having fully focused development plans (infrastructure, basic human needs, economic activity support etc.) specific to these areas. These communities are not properly accommodated, into the policy frames built. Politicians have forgotten the slippery or dusty paths they strolled during their election propaganda. Due to the situation these people need to pay most of their time in planning survival strategies. Due to the situation even though they are literate, they fail to see that 'Information Literacy' that can be used as a tool for the survival strategy. But 'Information Illiteracy' and 'poverty' causes each other to be in the same vicious status. Because of poverty conditions people could not upgrade the IL, and due to low IL level they can not develop. Hence the situations are interdependent.

Whatever the geophysical condition, an appreciable condition is seen in these areas. That was information and service provision in the health sector in the country and which may be the reason for low overall death rate, which was as low as 6.5/1000 in 1995 (Dept. of Census & Statistics, 1997) which also caused higher literacy level within communities in health information. The agriculture service network was seen fairly satisfactory but not strong as health sector. However the geo physical condition of these areas caused the normal day shorter for the citizens in these areas than the people of urban or sub urban areas.

6.2   Structural Barriers

6.2.1   Infrastructure facilities and services

As mentioned in the geographical conditions that affect IL, low infrastructure facilities also have adverse effects on IL. See Table 4 below for the situations observed in the areas which were under study.

Geo. zone No. Vill.	Electricity supply	Roads & Transport	Water supply
Upcountry wet zone villages -02	- Electricity supply is available. - But affordability to obtain the facility is highly unsatisfactory	- Motorability - with difficulty or not suitable at all. Hilly pathways possible to walk only. - No public transport up to the village. Only private vehicles.	- Fountain & well water. Clean potable. - No pipe service or irrigation terrace system. In hilly places no pipe lines. - But tea estate com.s have water service
Upcountry dry zone village -01	- Electricity supply is available. - But affordability to obtain the facility is highly unsatisfactory	- Motorability - with difficulty or not suitable at all. Rotten pathways possible to walk only. - Occasional public transport up to the village. Few private vehicles available	- Public deep wells and. no water service. - Some people need walk long distance to obtain water. - In dry season water is distributed by local government office. - Sometimes they buy water.
Lowcountry wet zone villages-03	- Electricity supply is available to about 75% of the families	- Motorability – roads in good condition. - Regular public transport up to the village. Private vehicles available	- Basically well water. Some local govt. divisions provide water service.
Lowcountry dry zone villages- 03	- Electricity supply is available up to a main point on the village road	- Motorability - with difficulty or not suitable at all. Rotten pathways possible to walk only. - Occasional public transport up to the village. Few private vehicles available	- Public deep wells and. no water service. - Some people need walk long distance to obtain water. - In dry season water is distributed by local government office. - Sometimes they buy water.
Fisheries villages- 01	- No electricity supply	- Motorability –with difficulty. Main roads not in good condition. Sandy paths. Occasional public transport up to the village. Very few private vehicles available	- No water service. - People need walk long distance to obtain water. - Water was distributed by local government office. - They need to buy water.

Table 4
Basic characteristics of infrastructure in the areas studied

These villages consist of house holds sparsely located, non-motorable roads, difficult hilly or rocky pathways. In some cases distance observed was considerably long to access into post offices, public libraries, community centres, temples, hospital clinics, schools even to the village boutique etc. The situation causes to reduce the speedy access into information channels and to information sources available in the village. Difficult roads also stop delivery vehicles come into the villages such as delivery of news papers, delivery of handbills, pasting posters on trees etc.

Less systematic distribution of electricity also complements this disadvantaged situation. Without electricity information dissemination through mass media was also limited so that villagers had to depend upon battery source of energy, to listen or watch news and other programs of their interest.

6.2.2 Information infrastructure

Information infrastructure is an essential requirement to be satisfied when implementing information dissemination projects (Seneviratne,2001). Information infrastructural situations observed in the villages investigated are studied under; information provision in the areas, availability of schools and libraries/information centres or agencies, telephony, mass media systems, newspapers and other methods information dissemination and human base. Quantitatively available data is summarized in Table 5 and Table 6 on information infrastructure.

1	2	3	4	5	6
Geozone +no Vill.	Schools/Teachers/Studts/Distn	Information providers	Language literacy	Pub.Lib/distance	Telephone/ Radio/TV
Up country wet zone – 02 villages	01/village. Primary schools- Mostly with 1-2teachers / Students 15-30 1-3 KM from vill.	Govt. info. provision- 2 NGOs operational. Private- Village soc.	91%	01/village. very primary with less than minimum resources/ 12-18 KM from village	10 land phones, 6 hand phones./ 98% access to radio, 85% to TV But mostly battery operated and mostly used to see Indian films and few tele dramas
Upcountry dry zone -01 village	01/village. Primary school- with 06 teachers / Students 50 - 60/1-3 KM from vill.	Govt. info. provision- No NGOs operational. Private- Village soc.	82%	No library	3 land phones, 4 hand phones./ 98% access to radio, 75% to TV.But mostly battery operated and mostly used to see tele dramas,or Indian films
Lowcountry wet zone - 03	01/village. Primary schools. 1 with upper level. 10-60 teachers/1-4 KM	Govt. info. provision- 5 NGOs operational. Private- Village soc.	94%	00-01/village very primary with less than minimum resources/ 05-18 KM from village	Considerable no. of Land phones + hand phones. 98% access to radio, 98% to TV.Mostly used to see News, Tele dramas,or Indian films
Lowcountry dry done - 03	01/village. Primary schools. 1 with upper level. 10-60 teachers/1-4 KM	Govt. info. provision- 12 NGOs operational. Private- Village soc.	75%	00/village Nearby provin.library minimum resources available/ 20-30 KM from village	5 land phones, 4 hand phones./ 88% access to radio, 60% to TV.But mostly battery operated and mostly used to see tele dramas,or Indian films
Fisheries - 01	01/village Church primary school. 01teacher/ 10-15students / 1-2KM from vill.	Govt. info. provision- 2 NGOs operational. Private- Village soc.	71%	00/village Use nearby provin.library Minimum resources available/ 20-30 KM from village	04 hand phones 90% access to radio, 78% to TV.But mostly battery operated and mostly used to see News or Indian films

Table 5
Information infrastructural situation in villages surveyed

Key:	
1 -Geographical zone	4 – LanguageLiteracylevel
2 -No.of schools/ school status/ No.of teachrs/students /distance	5 – No. of Pub./ com. libraries/ status distance
3 –Information Providers operated in the area	6 – Telecom./Mass com.- Access to radio/TV

It can be seen that the village school is mostly a primary school (Grade 3 category). In most schools observed, classes for standard grades are not available due to unavailability of teachers and sometimes the schools are closed when the only teacher or principle was on leave.

School attendance was very low during the seasons when children have to assist their parents for the agricultural or other economic activities. Very few students pass GCE ordinary level to the advanced level to enter the government universities so that school drop-off level is high in these areas. It was observed that most of the dropped off category of young population engaged in with agriculture or any other traditional activities already established by their parents but rarely involved in any alternative economic activities. IL level of those depicts more advance than their parents but cannot be counted as efficient in terms of modern IL concept.

Radio and Television availability in these areas was highly satisfactory. Listening to radio or TV in its government and commercial channels, normally gives the public basic understanding of the knowledge and information needed for day to day living. But some obstacles for the usage were seen. There is no electricity to most of the house holds in the areas surveyed. They use batteries for the purpose (about 68%), hence the TV is used to hear news and to see Sinhalese TV-drama and Hindi/Tamil films. About 65% respondents not bothered to see some useful programs in the TV which are noted as helpful to ordinary citizen due to the time blocks used by the radio/TV channels in broad/telecasting of the programs. Normally these kind of professionally and vocationally useful programs are scheduled during the daytime and ordinary citizens are not around at this hour of the day due to the economic activities they are engaged. But the radio was listened by many, yet in up country areas those who work in the fields/farms during the day cannot use the radio due to constant rain and drizzle.

Another barrier identified was government information provision to remote areas. How ever there is a well established administrative structure in the country, with a last link in the administrative hierarchy was placed in the village itself (Grama Niladhari), who is a representative of the Divisional Secretary. He is supported by other village level representatives from other line ministries. This conventional information flow is not strong enough to create information literate citizenship according to modern IL standards. Unlike in other countries, E-governance concept is still new to administrative structure in Sri Lanka. Facilities and benefits that can be derived through e-governance systems were not clear to 6 Divisional Secretaries out of 10 interviewed. Availability of access to government information electronically would automatically upgrade the IL level. Unfortunately the concept is still under planning stage in Sri Lanka. There were other information that inflows into the rural community, but not formal and no fixed frequency was seen (private financial services, insurance schemes, educational institutions etc.).

Availability of public libraries or resource centres in these areas is not at an approachable distance. Only 3 public libraries had computers out of 10 surveyed, but not available for public access. See table 6. The public library is used mostly (about 95%) by students and is not popular among adults due to less resources, distance and absence of community

outreach programs launched through the libraries. So that, an easiest opportunity to attain/enhance IL skills through the public library had slipped away from these communities. It can be seen through the data collected that the simple communication and information access facilities in the areas surveyed were low and what was available not within a convenient distance, see Table 6 for distance of Public libraries, Community centers, Post offices and communication centers from the villages studied. According to a recent proposal main post offices are equipped with e-access systems('Sannivedana Piyasa') yet not in quickly approachable distance. Ownership of telephones is also counts low when comparing with the urban and sub-urban holdings Table 5. The situation strictly applicable to low level of IL in these areas.

1	2	3	4
Geo. zone No. Vill.	GPO/Distnc	Pvt.Com. Cen /Distnc	PubLib/CC
Upcountry wet zone villages -02	10-15KM	10-15KM	15-20 KM
Upcountry dry zone village -01	28KM	15-20KM	28 KM
Lowcountry wet zone villages-03	10-15KM	5-10KM	10-15 KM
Lowcountry dry zone villages- 03	10-15KM	10-15KM	15-20 KM
Fisheries villages- 01	10-15KM	10-15KM	15-20 KM

Table 6
Availability of simple e-access systems in areas surveyed

Key:

1= Nearest G.P.O. /Distance from village	3 = Public library/Community /Distance from vill
2 = Nearest pvt.Commu centres/Distance from vill.	4= Availability of house holds/schools

News paper is another source where a citizen could obtain up-to-date and many other relevant information. Due to many geographical, infrastructural and economic barriers access to newspapers counts very low rate among rurals. Most people get an opportunity to read news papers when go to the boutique, nearby town, a government office etc. But the distance matters again.

Another fact revealed through the survey is computer education is not introduced systematically into the rural schools, even though the subject is included into school curriculum. Some rural schools have computers which were donated by NGOs or well wishers. The problem of computer education remains same for not having competent IT teachers to teach the subject. So that computer literacy among respondents and within the house hold was seen, extremely low (about 3.2%) and highly unsatisfactory in terms of modern IL.

6.1.2   Socio-cultural barriers

Sociological cultural barriers discussed in the paper are on several issues encountered during the survey. First situation was regarding the sex and family status. The situation was observed relating to minority communities, eg. estate workers, fisheries communities.

In these communities females are equally active as men but rarely go out of their community in looking for information, especially married women, regardless the age category. About 70 % of the female respondents of the two special communities observed had no enthusiasm showed in obtaining information though they were equally good workers as male population. But this general percentage differs when it comes to special categories of information, such health, some issues of education and cultural affairs.

Language illiteracy was also high among the women in these communities unlike among ordinary rural areas. About 50% of the females investigated in the survey were illiterate and very much depending for information solutions on husband, relatives and their own children. The situation has a relationship with their ethnicity, religion and culture, i.e. estate communities (tea,rubber) and fisheries. This situation was slightly visible among ordinary rural communities, especially among traditional families. But in ordinary rural families new generation shows some sort of dynamism regarding cultural and ethical issues than within so called special communities.

Male respondents in these communities were active workers. But very few were shown efficient in obtaining information for their needs. It was shown that most of the people, about 85%, depend very much upon the community leader (eg. In estates 'Thalawar') or religious leader (father or priest). The trade union leaders also play an active role in providing information. The situations paves the way non-polishing of information skills among these communities. No efforts have been taken by the community school or any social organization to upgrade the IL level.

It was seen that female respondents' literacy level is generally lower in passing steps than male class. This was particularly true in special communities like tea and rubber estate communities and among fisheries communities.

6.1.3   Socio-economic barriers

The economic conditions in the areas investigated were not highly favourable for the social life of the communities, where economic condition has a direct impact not only over the IL, but other socio-economic activities such as education, training, health, housing, etc.etc. All 10 villages surveyed belong to low income range. About 81% of the respondents do not hold permanent government or private sector employments. Out of the non-employed respondents about 60% have their own plots to engage in agriculture. Rest of the population had to survive on crown lands or by doing temporary work. Out of population who holds employment, about 50% are self employed such as business, brass and gold smiths, indigenous physicians, artists, carpenters, masons etc.

As the majority is in low-income group they are definitely in a certain level of poverty, which made them, spend most of the time to earn for their families. So that time to spend for information seeking is difficult to them as information provision facilities are minimal in the areas. But when information is needed in case of the economic activity they involve or about the health of their family, or any situation which is to be handled using

information, they have shown some high level of enthusiasm about knowing information, selecting, using etc.

Even though they are in need of information, they have spare financial resources to spend on contacting the resource; obtain the resource, method of using the resource etc. Therefore people with low income are bit hesitant to go seeking for unknown territories for information, as they are fear of spending lot of money. Some fear of using unknown information itself. In communities with better income, the situation changes with the possibility of accessing information sources and possibility of obtaining them. Almost 100% permanent employees of government, private sector or self employed knew that they need information, able to categorise information, select information, evaluate and use them and also direct another to the required source or share the information with another. Almost 90% of the businessmen knew how to obtain the information when an information need had arisen. Following facts were revealed among community categories in looking for information

The factors that act as barriers to IL level can be indicated in the expression below.

$$IL_b = f(G_{b)} + f(S_{b)} + f(T_{b)})$$

Formula III

Where,   ILb = Barriers affect IL
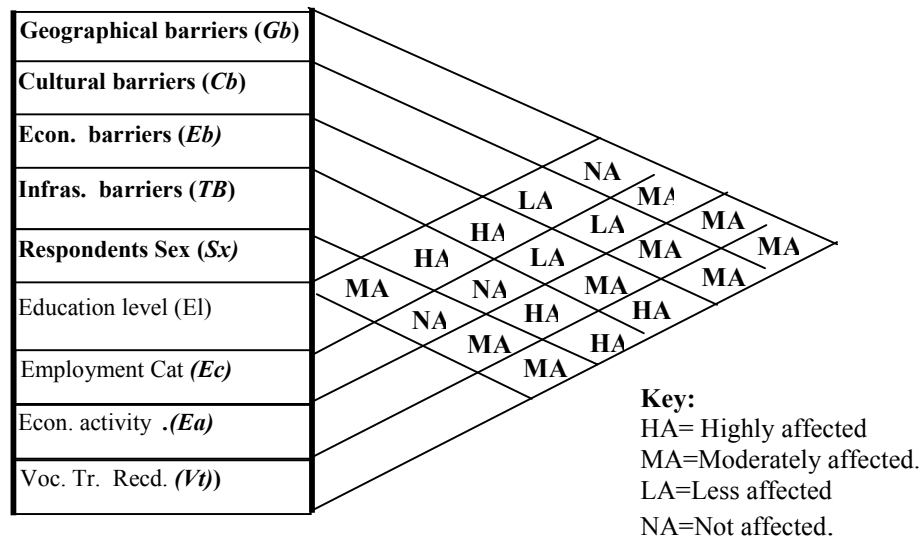
Gb = Geographical barriers
Sb = Structural barriers
Tb = technological barriers

The barriers are hence, the factors that affect to upgrade information illiteracy too. Therefore the Information Illiteracy Level'= IIL, is also a function of the same factors that affect IIL and the formula can be expressed in the same way as follows. Here the barriers coverted into factors.

$$IIL = f(G_{f)} + f(S_{f)} + f(T_{f)})$$

Formula IV

The proximity chart given in Frame 3 indicates level of influence from the barriers identified to the factors affecting IL of rural peole.

Geographical barriers (*Gb*)

Cultural barriers (*Cb*)

Econ. barriers (*Eb)*

Infras. barriers (*TB*)

Respondents Sex (*Sx)*

Education level (El)

Employment Cat *(Ec)*

Econ. activity *.(Ea)*

Voc. Tr. Recd. *(Vt))*

NA

LA   MA

HA   LA   MA

HA   LA   MA   MA

MA   NA   MA   MA

NA   HA   HA

MA   HA

MA

Key:
HA= Highly affected
MA=Moderately affected.
LA=Less affected
NA=Not affected.

Frame 3
Level of influence of barriers to the factors of IL

7.0   Solutions and Recommendations to upgrade IL

According to the above analysis, it was seen that there were factors (requirements) that are to be fulfilled in determining the information literacy and barriers standing across in attaining the requirements at optimum level among rural citizens. It is tried to analyse these situations with a view of recommending and suggesting remedies for them. So that it is tried to bring up some solutions as recommendations in the paper. Some of the solutions lie within the administrative, socio-economic and socio-cultural structure itself and some are proposed new. Hence these solutions can be categorized as 1) Structural solutions and 2) Alternative solutions.

7.1   Structural solutions

Structural solutions are the remedies that are embedded in a structure itself but so far not treated as potential to promote IL level in communities and not explored or utilized. These remedies can be utilized without changing the existing administrative or policy frames, but may need to allocate or transfer funds for implementation of proposals.

One such recommendation is, to develop existing public library structure and services to promote IL level in rural areas. It was gathered that some public libraries are very active in some areas and in another case it was not. In some cases public library is not situated at an approachable distance and its' resources and services were minimum (see table 6) Setting up more public libraries at an approachable distance or mobile services and kiosks or at least extension of library services will be very important to be of support in

upgrading IL level. The will be an encouragement at first for the young generation in providing reading materials to support their knowledge. Different information dissemination and information literacy programs can be adopted for adults later. According to the facts gathered from the public library at Lankatilaka, (Pilot survey conducted at Village Rabbegamuwa, Lankatilaka) rural adults are frequently visit the library, as the literacy and other programs, the two librarians conduct are very effective. The public library is one of the most effective places in obtaining information for their day to day and economic activity based information needs. The initiative is to be started from the relevant administrative authority where the public library belongs, which is the local government body. However the move has to come as a policy decision from top level.

According to the survey, principals and teachers of the rural schools maintain a closer connection with the village communities and residents of estate colonies. The rural school, though primary or high, can become an adult learning centre, when day classes are not conducted for children. The public library in the area can become the lead role in IL programs that can be conducted in the school for both children and adults. According to a World Bank project started in 1999 (Wijetunga, 2004) 4000 teacher-librarians(TL) were recruited to all categories of schools. These newly recruited graduates can be trained and be used for these IL workshops not only in their schools but in other small schools in their locality. For the question of training these TLs can be solved through an education ministry sponsored training which could be conducted at National Institute of Library and Information Science as the main focus of NILIS is to train TLs in LIS. Another potential is the Sri Lanka Library Association (SLLA), Department of Library & Information Science University of Kelaniya (UoK), where the expertise available on IL could be easily tapped.

Rural people maintain a close connection and have a great respect to religious leaders belong to their community. Village temple (Buddhist or Hindu), church or the mosque are the places where they gather very often. Their children go to these places where the Sunday schools are being conducted. These religious centres may be used for IL promotion programs where the communities like to gather around with out much influence. Again the principals, TLs, public library officials, other volunteers from SLLA and UoK can be called upon as resource persons.

7.2   Alternative solutions

Establishment of Community Information Centres (CICs) at rural level is still a new idea to Sri Lanka. The establishment of which at all urban, sub urban, rural levels is proposed through the e-Sri Lanka program (Samaranayake,2003). Yet, the necessary organizational structure has not been selected. Main idea of setting up CICs is efficient provision to government information and services as well as other supporting information and services to all citizens in Sri Lanka (e-Sri Lanka, 2004). But the underlying concept for efficient information access and usage, that is 'information literacy' is not focused through the program Introduction of CICs at rural level will also be the public

information dissemination structure and will be able to use within the e-governance system proposed.

Community income group	Completion level of IL phases	Importance of CICs at village level	Willingness to Use ICTs to obtain info.
Low income group	10%	Very high	Moderately high
Middle income group	85%	Very high	Very high
High income group	97%	Very High	Very high

Table 6
Relationship of income groups and attitudes for establishing CICs with modern ICTs

However an alternative solution for upgrading literacy level is establishing CICs at rural level. It will be a novel experience modern rural people to develop information skills in association with simple electronic systems. It was learnt from the survey that more than 90% rural people marked their willingness to have an information centre in their locality to obtain necessary information. About 70% agreed to learn and use ICTs by themselves, about 20% showed willingness to learn and use ICTs through their children, to obtain information. Hence they will learn how to obtain information and will obtain the required peace of information efficiently. Therefore there is a high potential for upgrading IL level through CICs. These centres also would be incorporating the activities of referral services, services of information clearing house, counseling services and train the community for effective usage of information.

8.0   Summary

In summarizing the facts revealed in the survey, IL concept is a set of abilities that needs to attain a certain skill level in a person in obtaining information. The process tends to change upon the status of an individual, category information need and upon the environment he belongs. So that the concept can be treated as a 'Living Concept'. Community Information Literacy (CIL) process pertaining to rural communities in Sri Lanka was modeled and factors affecting the set of abilities were identified. It was established that to upgrade the IL level, barriers that influence adversely to the factors affecting the IL level (barriers causing illiteracy), are to be eliminated. Solutions are tried to recommend to upgrade the CIL level in rural Sri Lanka. Solutions proposed were the remedies that lie within the socio-economic structure, but not explored so far and potential solutions that are to be introduced anew to the socio-economic structure.

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