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THE MARKET ANALYSIS OF THE SOFTWARE EQUIPMENT FOR A PROCESSING OF THE PROJECTS IN THE FOREST ACTIVITY

(Bachelor thesis)

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I declare that I have written this dissertation myself under the tuition of Ing. Ladislav Holubář and I have listed all used literary and technical sources.

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Introduction

It is necessary to determine a quantity of the human work by the help of making of efficient norms to determine detaching terms for work in the forest economy.

It is important respond to conditions (snow, rain, shape of the ground or the landscape).

These norms of the consumption of the work serve as a basis for calculation, mainly.

It does not serve because of it to reward workers according to efficiencing norms, but that is why to establishment prove to determine, how many workers are needed, how long time work will be last and haw much money will it cost, of course. On the basis of it the projects are made in the forest economy. It is possible to use LES programme to simplify the activity of these **projects**.

LES programme serves as an entrance of the topical data bank of national valid efficiencing norms in the forest economy and it also serves for their application or for projects processing in conditions of concrete growths..

These projects are made for mining and well – hepting activities, to protect woods and so on. The working up of the projects is the most important on the lowest article as a forest administration or woodcrafts. The projects are worked on concrete growths up and the establishment wants know what will be the wage costs to afforest a hectar.

Of course, the first article is the nearest, because the forester knows the sector and knows how are the teritories combinations of the earth, the degree of contamination and so on. And these are factors, which affect ifficiencing norms.

If the projects are worked on the lowest article (forest administration, woodcrafts), up then are submited to a establishment. The establishment knows exactly on the basis of the project, how many reedlings will they need and break reedlings up according to woody plants and the height.

These projects are worked up that is why to take advantage of the woods earth fund in maximum measure and also that in why, that there is determined by law, the mined clearing must be minimal two years afforest again. The determining of these targets issue from the forest economic plan. The forest economy plan is determined for particular forest economic whole and it works forest economic improvement of woods out.

In the Czech Republic it is concretly in Brno or in Kroměříž. This economic improvement of woods says to establishments, what they have to in this growth, how to

afforest it and also say them, what to use for afforesting. It means, that establishment cannot choose trees to afforest an area.

The woody stucture is established to forestall harms. For example, the bark destroyed spruce monocultures in Šumana or nowadays, it is the area in the east Bohemia, the bark has not removed, because it has been negleted. These attacking trees have not liquidated and the bark has always spread.

The economic improvement of woods determines what composition or woody structure have to be there. That is why establishments work these projects up.
LES programme is very good to elaborate project excellently and it is using for utilising of projects in growing activity, mainly.

Picture 1: *Recorded timber infested by bark beetles in Norway spruce stands*
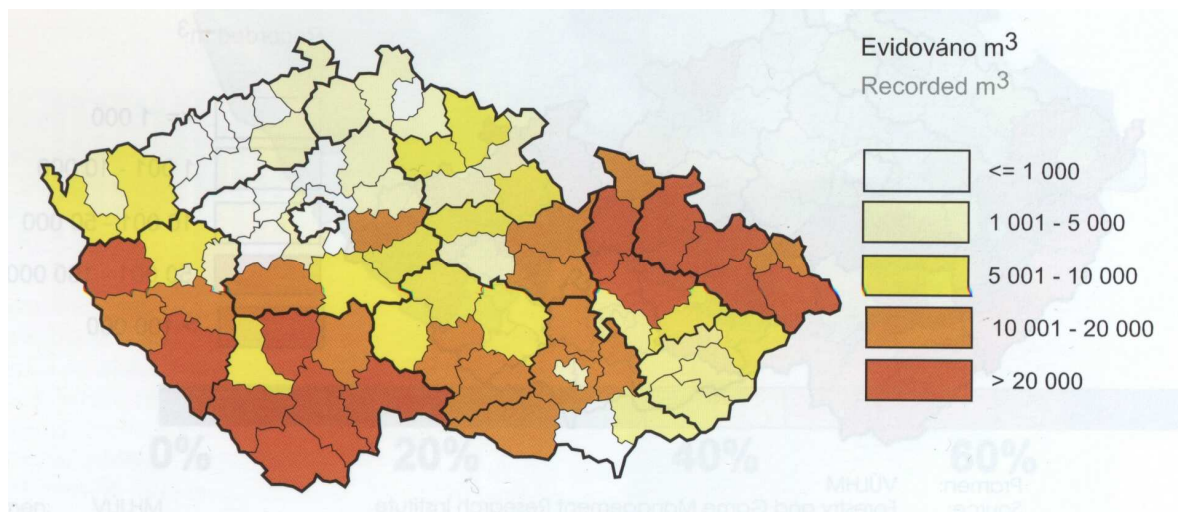
Source: Forestry and Game Management Research institute

Forest economic plan determines, that it is necessary abide by a need of the wood, law and rules. In the Czech Republic, there are about 70% of works in norms in the forest economy. In Slovakia it is the same. Nowadays, the Czech Republic uses norms of consumptions of the work only, which had been elaborated in 1989 and during this time there was no actualization and new norms has made minimally.
In Slovakia, they are asked there for to make new norms and it is influenced by using of LES programme.

This programme serves as a database of norms of the consumtion of the work which we use in the forest economy and we have modify versions for the Czech Republic and Slovakia.

2. The characteristic of the programme of the forest company LEKTA service, Ltd. [1]

1.2.   The basic description of the programme

LES Programme serves as an entrance of the topical databank of national valid efficiancing norms in the forest economy and it also serves for their application or for projects processing in conditions of concrete growths.
It makes a work with data of economic plan LHP, VLS possible, but also it is getting and working up. It supports an accers to data from the others, usually using programmes (EMV, forest production). The calculation of the economic plans makes projects detaill and pully by work in recording growths with the proposal of acceptable technologies. An administrator of informations in user definite group.

Many others functions delete possibilities for the transfer of data among more workplaces, supervision of territorial areas and owners of woods. Then is a work with the catalogue of services, assortment of mining, norms of the growing, sowing and so on.

The whole system cooperates with users, it is always developed and completed non-stop to be a valid and justified helper in everyday practise. For users, there is provided the newest programme version for all over the year. It is free of charge. Then, after the year, users must pay for it.

1.2.1. Licence and guarantees – the terms

Who buys a licence, he or she becomes a legitimate user of the programme.
They also have a right to extending guarantee for one year and a right to free of charge upgrade for the last programme version. It is also for one year. How many licences you buy, so many computers can be installed.

By the work an the net, you have to know, that there can be the same number of owners and licences, only. The firms also provides an exception for schools teaching. A product is protected by statues about the copyright and every copy we can identify.

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[1] *Výkonové normy a projekty v lesním hospodářství.* Brno: vydavatelství, 2002. s. 1 - 40

The owner of the licence, who doublecopies the programme for the other person, it is unauthorized and he or she can be criminally prosecuted as same as the illegal user.

Data are not a part of the programme. The firm adols data with programme together. And also has responsibility for their correct and regulatory actualization. And if you want sell your own norms to the other people it is possible by means of the large system of customers.

1.2.2. Technical requirements

A arbitrary computer IBM PC compatibilly with a processor XT/ AT 286 and higher, operating system MS-DOS from the version 3.3 and 8 MB of the free place on the hard disc. But the firm recommends 468 or Pentium with 4 (8) MB RAM.

After the installation of upgrade of higher version will be 3 MB of the free place on the hard disc enough. The programme is determined for MS DOS, the version under the windows 95, is going to be ready. But works under the windows 3.0 to 95. without problems. If you want figure the Czech diacritic property or graphic illustrations, it is necessary set it on whole screen off. If you have an originally version – Windows 95, you have to use correcting programme for the right work with programmes. It is named Windows 95 Sevice Pack 1.

In case, the owner of the programme will want set programme off under the Windows 3, it is necessary to increase upper limit in an editor P/F of expanding memory (EMS) on the worth about 4000.

1.3. The programme installation and setting off

The instalation is also easy for an usual computer owner, but it is better, if the installating is practised by expert. The installating programme neither obliterate not rewrite important sets alone and if there is a mistake it advises to user. The installation and the skilling we can order in the firm.

The part of the each supply is **LESRUN.EXE** programme esuring a start of the respectively librar and a start of the module into the memory. We can set it off directly or by the help of the remoting set LES. BAT., which is always made by installation automatically. Then the sets, necessary for a work with different configurations of the

computer. There will be determined necessary library actually and also will be offered to put unnecessary out after the installation and setting the LES programme an user´s computer off. Or the user will be indicated, that if there are the bigger processor and enough memory, there have not been used corresponding libraries. In this case, we recommend to wait with effacing of libraries and it is better to ask an expert for a help, who has to repair a computer to work ok, without mistakes.

1.4.　The setting off

The setting off: **les <ET>**

The programme is going to ask for a way to data´s sets and there will be executed the first inicialization of data after the establishing into the operation memory. Check and an inicialization of data sets are executed once a day only and after the uncorrectly ending of the programme by the repeated setting off. It depends on adjusting of pre-choices of putting the password if there will be involved.

1.3.1. Basic instructions for work

You choose the function from menu without regard to actually adjusting of the line, if you press expressive authorized signor you used darts and extend a pertinent line and press **<ET>.** You come back by help **<ESC>** key.

You get on **<F10>** both this key and mouse or tabulatories. You can control also screens, lirts and other elements by mouse.

The programme is equiped by interactive prompter so you answer on its questions, only. It offers possible to use some special function keys, the programme indicates on this possibility on a prompting line with the brief describe of pertinent function. You can find a detailed prompt if you press **<F1>.** At any time we can fit changing data on disc **<B2>** and call out the supevisor by **<F3>**. Choice elements are indicated in front of its tittle on the left. The keys are described on the prompting line and enable us a choice. It is usually key **<ET>** or **<INS>**, for the choice stop of the particular element, <V> indicate all elements, **<N>** disturb all indicatings.

Choices usually choose / disturb a choice of all elements, which accomplish fixed standards. For example **<+>**, it indicates all projects in the choice of projects, which have the same owner with the extending growth, on the other hand **<->** gives away the

indicating of growths. Pre-choices we choose by gaper or we clap a mouse and the choice alternative is indicated by a cross. Pre-choices are noted by square brackets.

1.5.   Function norms

A system of function norms enable to owner an *inspecting and looking out in a calatogue of function norms* and connecting with the catalogue of modification of times and normatives. These norms are used for processing of projects, calculation of optimum solving works and also for finding charges out.

Here are not accessible elements for user´s modifications of norms, nor for a calculation of news function norms on the base of time shots. That is reaction, the most of people use a regulary actualization service, which makes changes sure in the Czech Republic unifiedly.

The creation of new function norms will be an imposition for specializing superstructues for normers, which is prepared nowadays.

1.4.l The catalogue of norms

The norms are divided according to sort of fallowing activities. There are ten groups :
1) Forest – school activity
2) Afforesting
3) Educational interferences
4) Forest protect
5) The other cultivating works
6) Mining
7) Approximating
8) Transport
9) Stores
10) Associating production

The norms in stores have not common validity and are delivered for order, only. We can peruse in particular function norms by the motion in menu of groups and norms numbers. The tablet we can peruse in accorandence with **<adjusting>** in the basic version or in the whole wording with all substituting references. The choice **<find>** looks

the norms up according to arbitrary parts of the text both in tittles and in its texts. The choice **<picture>** gives illustrations to the adjusting norm.

1.5.2. The catalogue of improvements of time

It enables us to create and change a databaze of improvements of time of normatives, which are used in function norms and also for concrete calculations in economic plans.

The catalogue has got a consecutive order :

1. lowing time improvements
2. increasing time improvements
3. lowing time normatives
4. increasing time normatives

Then, the improvements are distinguished according to particular function norms.

But have attention to this rule:

Improvements and normatives are commonly used within the framework of groups, which are registered in groups 2 and 5 of function norms.

It mens, in practise, that the time improvement from the afforesting, can be used for the other cultivating works. It is necessary to differentiate items by numbers within the framework of these groups. Its chage is permited after he choice **<editation>.**

It is possible to add, change or copy a number to a group of norms and a sort of **time / normatives** improvements, the upper limit of a worth and discriptive text. We can also determine to normatives a technical unit and there is offered a list of out printing tittles of the type calculation. The representative group of the calculation will be offered during calculation of project precedencly.

This serves for countig of resultant time of respective normativ. All calculating groups are accessible only if the supervisor of informations help us.

1.5. Projects

The system of projects enables us to create, change and process economic plans for particular growths in contact on the other data, inclusive of the detailed calculation of charges, profit, time and all other parametrs with creating and by choice of unlimited numbers of combinations of resolving and by the choice of the most advantageous according to different parameter. Then, it also enables to keep a database of particular assortments, operations and norms of the growth.

1.5.1. The Actualization

The choice of a programme

Because the economic programme of the each growth contains many informations, it is not possible to figure them and it has not been efficient, too. It is better to work with data, which are important at the moment. And about it look after the programmes. The upper and lower part of the tablet is common for all sentences of the same growth, the medium part of the tablet is different for the each sentence.

The simplifying diagram oft the economic plan for one growth:

A GROWTH -> SENTENCE ->   AKTIVE SET= OPERATION 1+2+...

UNAKTIVE SET = OPERATION 1+2+...

UNAKTIVE SET = OPERATION 1+2+...

SENTENCE->   AKTIVE SET = OPERATION 1+2+...

The requesting growth adjusts by the help of the first list in the upper left corner and in the list, there is chosen its appropriate part, according to substituting wood plans.

The choice **<programme>** enables us to choose, which will be accessible on screen and also to select a way of the figuring.

The choice **<assortment>** enables to book requesting assortment of mining wood for adjusting growth or wooden plant. Assortment can be whatever item, which make a profit, for example contractual price for a work..

The choice **<+ - wooden plants>** adds or effaces one sentence of the plan to complete it by another sort of wooden plant.

The choice **<+ - growth>** adds or effaces all growth..

The choice **<find>** looks for gowths according to part of the denotation.

If you press **F9,** the datum will be adjusted under the cursor as the first where we get from the main list. It is advantageous to accomplish an agreeing datum in more growths.

The choice **<calculation>** sets a calculation of project off :

The first offer enables us to switch over to menu of the choice of an active norms set. The offer is on a level of function norms.

It is possible to make more by combinations of resolves and by this choice we always can conect or disconnect one of them, according to instantaneous need. It is possible to choose a sat with the lowers demands of time, with the minimum financial charger, automatically.

Contingently, we can choose a concrete sat by darts and **<ET>.** And user cames back to the first offer and he or she can start an editation becoming by darts and <ET>.

Then you go to the next offer and you can choose from these possibilities :

1 – to stop operation
2 – to choose numbers of norms
3 – to calculate an operation
4 – to change a number of operation

This proces is the most possible in practise :

The choice **<2>** chooses concrete numbers of norms, which are for concrete operation in a consideration. At the beginning, there is chosen one norm only or none. If there is lug amount of norms, we must respect, that the programme needs to know many data for a calculation of normsfor concrete growth. It reads many of them in economic plan and in last answeres but if the number of norms will not be limited, the programme will have many questions.

The choice **<3>** starts a calculation of an operation and the programme usually gives some important questions about a growth, but if there was booked more than one norm it submits a tablet of norms, configurated according to basic time – consuming. It is possible to choose one of them by darts and <ET> .

The system commands an user considering to concrete conditions of a growth and specification of a north by the best way to the aim. If the user is with the result satisfied, he or she can go back on a choice of operations and go on according to a need.

1.5.2. The basic steps by a calculation of an operation

Table 1: **The basic steps**

To complete concrete data about growth, a choice of norm for a calculation form the scale of the most advantageous solvents.
To book a way of calculation of basic litme or book a worth.
A possibility to apply going down modifications of time admissible according to a norm.
A possibility to apply going up modifications of time admissible according to a norm.
A possibility to apply going down normatives of time admissible according to a norm.
A possibility to apply going up normatives of time admissible according to a norm.
A possibility to apply a piece – work and book a gurotient of time wage
To book a basic rate, compensations, overheads and a profit to confirm or change a number of hours in a shift.
To book next charges inclusive of posibilities to practise one or more calculations and resulting worth add to charges (Ctrl + V).
A specification of efficiency with a possibility of all operations within the framework of supervision of efficiencies.
A check up on data led results of calculation of operation and also calculation of whole plan.

Source: Norms of the consumption and projects in forestry

1.5.3. The assortment

Assortments of mininig – its plans, corrections and disturbes.
Assortments we can use for booking of projects. An assortment can be whithever item including into the profit. Delivered assortments are exemples only and the user has to modify it prices of particular assortment, which make a profit for example contracting price for a work.

1.5.4. Functions

Catalogue of functions – its plans, correcting and disturbes. It is important for watching of a work within the framework of wooden growths from the standpoint of the type of the work and also for adding of data about actually works, which are recorded by other programmes. In this case it is necessary, that numbers of functions and underfunctions must accord with the indicating in programmes from which will be data about filling received.

If you use a starting of data from processing wage cards, it is necessary to indicate partecular functions to correspond with them fully.

Then, there must be chosen "datum of project", because the programme cannot give into projects relevant documents about an activity.

1.5.5. Norms for sowing of growths

It contains tablets using to book a number of seedlings for projects of afforesting. It spares our time and enables us to avoid mistakes. If the second worth of spon is zero, the sowing is in ranks. Delivered tablets we can modify, of course, but there is no need in practise.

1.6.   Owners´ supervision

It is for holding of database of owners of wooden growth.
It is connected with system of processing of economic plans – projects two – way, where the owner´s number is a basic datum of each growth. Owner´s exampl is delivered

with the programme together, only. If you have own large database, it is unnecessary to provide it by hands. If you ask, we take it over.

The real owner of growth don´t have to be a holder, but sometimes it could be advantageous to make a numeral administration of woods, centres or the other units, all actvivities and resultes. Then, it will be easier to break it up according to these numbers.

1.7. The supervision of areas

It serves for administration and supervision of territoral areas, where are particular wooden growths.

It is delivered with commonly established list of parts in the Czech Republic, inclusive of a detailed description of this frontiers. Descriptions of ares are key data of each growth. But also here is valid a possibility as at the owners´ supervision. If you indicate an area, it can be **"fictional"** and it serves for lucid breaking projects up – <u>economic plans</u>.

1.8. The Input and exit of data

It serves for control transfer of select data among different workplaces and also to get needful data from data sets of another programmes.

Commonly we can say, that it is possible to read from the arbitrary memory medium (discs, hadrd disc, CD-ROM, ZIP) and we also can register into whichever installed rewriting medium.

The programme tests and offers a choice of possible equipments inclusive of a looking of the directory or the set up. For exit, there is offered a possibility to transfer data in the comprimate condition. The programme uses sits own comprimate mechanism, which saves about 70% - 80% of place in average, it is at usual data sets.

Comprimate sets end by suffix .DBQ or .FPQ. If the datum is recieved, these sets are unpacked in to the primary state automaticly. The programme ensures a spreaching of sets on more discs optimum, the some named sets are differentiated by the suffix DBQ, FPQ and it is always transfered together. but it cannot separate the one big set on more – bond archives and the essentiall enlaging of built – in comprimate function will be a part of same next the newest version.

We can go around of this example so, that we choose an emfty directory on the hard disc for exit and the we transfer it on discs by hepl of the usual "packed" programme (ARJ, ZIP). Or, for example if we transfer projects, we transfer data twice and so on. If wi transfer data among different workplaces it is needed to be install the same version of the programme on these places. There is figure a detailed statement about transfer data.

The transfer of choice function norms on the choice apparatus.

By **<Insert>** we choose norms for copying. If we press **<Insert>** once yet, the choice of this norm is disturbed. By keys **<+>,<->** we can choose or disturbe a choice of all norms of the group

By **<exit>** is made a physic copying of book norms and improvements of time belong to them. Then, we can use all functions by inspecting catalogue of functions norms.

1.8.1 The exit of data of economic plans

The transfer of choice economic plans on the choice aparatus. The choice of growths for kopying is made if we press **<Insert>** , the next press of this key, the choice of the growth is stopped.

By keys **<v>/<n>** we can **chose/stop** a choice of growths, which are adjusted by owner. Keys **<+>/<->** we can **chose/stop** a choice of all growths, wich are adjusted by owner. Keys **<o>/<b>** will do the same for adjusting area. All functions we can start by mouse, of course.

By **<exit>** is made a physic copiyng of bank growths. There are transfered growths inclusive of all respective sentences, according to wooden plants and elaborating calculation. It is possible to choose which need cohering data will be transfered with growths together.

There is offered :

- o **The catalogue of owners**
- o **The catalogue of areas**
- o **The catalogue of assortments**
- o **The catalogue of operations**
- o **Norms for sowing of growths**

1.9. The administrator of informations

It ensures common acces to informations.

But now, compored with last versions, we can figure during an activity, we just do. If we stoo a work, the administrator ensures a proper return, where we stopped our work.. An exit of informations is done by a choice of typical area and by names of exiting group. This is processed or it offers an user´s input, for example a choice from extracting items, a method of Result informations are possible to figure on screen to print, register or add into the text set and continue to work with it. Standard groups are a part of the supply, which cover needs of acess to informations of the most useral users.

There will be more and more of new completed groups with every new upgrade. It is also possible to book an arbitrary unstandard group to order. If the user wants a special exiting group, he or she can use a whole system of generation of group for its activity. The most exacting area is treated on attendant.

If you press **F3**, it is enough to choose an area projects and a group projects of quide. The guide is going to make an optimum exiting group and inserts it among completed groups by help of questions.

The group is possible to be used for a summary anywhere or the group can be modifiel by help of catalogue of groups and its elements.

The most acceptable:

- o *A choice – catalogue of groups*
- o *A choice of a character of informations*
- o *Instead of choice of the completed group to add a new <Ctrl+N>*
- o *Write a name and a brief characteristic*
- o *Figure some existing group into the vacant group*
- o *A group <+ group> and it modifies according to our needs*
- o *by F3 is possible to figure, how the group works at the moment, without breaking of its edition*

To modify items of conditions and methods is recomend for experts only. The built – in editor is used for creating groups and methods. The editor uses key combinations and strokes on mouse as the majority of text editors in windows.

It is emportant to realize, that the one line of definition of exacting group can be placed on more lines in a window of editor optically. That is true, that the real line must be endet by signs **CR/LF**, by key **<Enter>.**

The basic combinations :

<Alt+E>   - to figure large offers of editation functions

<Ctrl+2> - to stop the last operation

<Ctrl+R> - to restore the last operation

<Ctrl+X> - to cut out the block ot the text into the helping memory

<Ctrl+C> - to copy the block of the text into the helping memory

<Ctrl+V>   - to put a content of helping memory to a cursor position

<**Ctrl+A>** - to indicate a whole set as a block of the text

<Ctrl+F>   - to book parameters for the first looking for a chain

<Ctrl+G> - the next looking for a chain without compensation of the original chain

<Ctrl+E> - the compensation of the finding chain and a looking for the next.

1.9.1. The exit of groups (configurations)

The same, as a press F3, it offers characteristic areas and names of the group. It is processed immediately and resulting information are given for processing.

1.9.2. The catalogue of groups (configurations)

It serves for inspecting, generating, modifying and disturbing of exiting group, which are important to have needful informations. The exiting group is a textual set, which imparts to programme about what kind of informations is the user interested in. Take was made a generator of exiting groups, because it is not possible to ask users to learn an author´s ingenious synthactic rules. The generator is a compromise between a requirement for a simplicity of a service and a need of its large universality.

The generator of groups is a textual editor, with also enables us to put particular components into the group, diplace them or moplete a text by hands and at any time, it shows what is the group in the topical capacity competented. A disciption of basic informations are located at the bottom of the screen. The informations are accessible both mouse and key F10, but also by the relevant expressive element.

<exhibit> - it processes a group and it comes back into the edication after the figuring of results.

<+item> - to put items from the catalogue of items instead of a cursor.

<to repeat a line> - it puts a sign to a line, which will not excerpted, but the programme will know according it, that the line has to be processed for all valid sentences of the topical set repeatly and it makes an abstract. But here is the one rule, yet. If the sign will be processed. If there are more signs, sentences are excerpted all.

<+group> - it adds a full the other choice group.

<method> - to put an item method to the start of the group.

<charakter> - it offers a change to insert in it to the other characteristic area.

1.9.3. The catalogue of items

It contains particular elements, from which we can set exiting groups together. These groups can have very different qualities according to a booking.

It is important to change its names not often, if the names were used somewhere. Because the group refers to them by name by a calculation. A characteristic of the item has got an information worth only and we can modify it without consequences. If we inspect items, there are presented informations above the content of the adjusting item about its basic characteristic following from its job.

In a principle, there are these possibillities:

The installing item

- neither worth nor content are booked. If we use so item in the exiting group, we will always asked for a worth of the group by its processing.

Then, the worth is installed as a number into the group and it can be used for a contingent calculation.

The item with the indicating worth

The worth is given steadly, which is installed on its place immediately. The worth has got a bigger cogency then the content. If there is given both worth and content the programme ignores a content.

The item booked by formula

It can contain anything and it usually has got numeral or symbol worth. There an be in content a date datum, a text in quotation marks or in square brackets, constant, function, formula, transformating and also the other items. It is in arbitrary combinations, which are logical are accessible syntacticly.

1.9.4. The catalogue of conditions

This catalogue serves for limiting of excerpting sentences of data sets according to particular point of views. It must sind a logical worth back, because its content is not limited, too.

1.9.5. The catalogue of methods

The methods are the basic "building stone" of all systems. The methods open and put the needful data sets into position. It is not possible to recommend a substantial interferences with completed methods without knowledges of the internal structure of a programme and its data structures.

1.9.6. The renovation of systems from the original

This alternative is useful in case, that the original **"improves",** exiting groups, which do not work never more indivated "**only for specialists**". It is possible to indicate systems, items, conditions and methods, which do not have to be rewrite. The other elements of exiting systems will be by choice **read** an original substituted by original, attended to topical version.

2. The summary of the software with a forestry theme and with its influence on the market[2]

Nowadays, there is used a programme equipment for SWP – the supervision of wages and production and for creating of the forest economical plans in the forest economy, only.

The programme KALK is used by woods of the Czech Republic in a relationship with stock companies. It issues from efficient norms very little. It occurs to average considerably and this calculation does not reply to a reality for some growths. The forests of the Czech Republic – the state concern in Hradec Králové, incline for using of once worked up norms of the work consumption in the forest economy again.

The norms of the work consumption serves as a real basis for working of calculations up for particular actvivities effected by suppliers in forests, under the administration of the woods in the Czech Republic. These norms are very important part for a creation of calculations, for example the calculation of wager for employers.

In average, employers wage has grown up about 0,6% compared with the last year. The rate of the growth of an average wages in wood crafts has always overtaken a growth of wages in industries about 0,2%. But it is about 1,1% behind the average wages in the national economy.

The average monthly wage in the wood econom is lower about 2 295 CZK than the average wage in the national economy.

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[2] *Zpráva o stavu lesa a lesního hospodářství: Stav k 31. 12. 2003*. Praha: Ministerstvo zemědělství ČR, 2004. s. 54

Table 2: *Average monthly income in CZK*

Forestry		2001	2002	2003	2003/2002 (%)
		12 109	**12 772**	**13 543**	**106,0**
Of which	State forests	13 702	14 496	15 468	106,7
	Private forests	11 467	12 017	12 698	105,7
	Communial forests	12 743	13 588	14 499	106,7
Industry		**14 542**	**14 730**	**15 588**	**105,8**
Total national economy		**14 642**	**14 787**	**15 838**	**107,1**

Source: Czech Statistical Office, Ministry of Agriculture

A number of workers has gone in the wood economy down. This trend has already continued from the year 1989. Workers reducing within a year has slown down from 13,8% to 3,1%. To reduce a number of workers has not an area character.

Both in the national and comunity sector, there has come to a mild raising a number of workers, while every reducing of a number of workers has been concentrated into a private sector.

Table 3: *Number of employees in forestry*

		2001	2002	2003
Total forestry sector		**29 804**	**25 702**	**24 893**
Of which	State	7 081	6 290	6 412
	Private	20 083	16 984	16 010
	Communial	2 640	2 428	2 471

Source: Czech Statistical Office

2.1. The summary of state administrations, head quarters

Table 4: *The summary of state administrations, head quarters*

The agency for protection of a nature and regions	**Prague**
The agrarian chamber of the Czech Republic	**Olomouc**
The botanical institute of the Czech Republic	**Průhonice**
The Czech inspection of environment	**Praha**
The Czech forest union	**Chvojno**
The Czech chamber of special forest economic managers	**Nový Rychnov**
The Czech forest company	**Prague**
The Czech company of regions engineers	**Pardubice**
The Czech ecological institute	**Prague**
The woods of the Czech Republic	**Hradec Králové**
The forest institution Kladská	**Kynžvart**
The forest institution Boubín	**Vimperk**
The hunting – forest museum	**Úsov**
The department for a local development	**Prague**
The department for agriculture	**Těšnov**
The department for environment	**Prague**
The national agricultural museum – forestry, fisheries and hunting	**Hluboká nad Vltavou**
OS DLV – the special union of workers in wood industries	**Prague**
The promotive and the guaranting forest fund	**Prague**
The houst of parliament of the Czech republic undercomittee for the management of water and forest supplies	**Prague**
The RECULTIVATION	**Most**
The owners´ union of forests and the inestors´ union in the forest economy	**Prague**
The administration of the national park in the Giant Mountains	**Vrchlabí**
The administration of the national park and the protecting of the region in Šumava	**Vimperk**
The administration of the national park in the Czech Switzerland	**Prague**

The administration of the national park in Podyjí	**Znojmo**
The administration for protecting of nature	**Prague**
The state veterinary administration	**Prague**
The state veterinary institute	**Liberec**
The state agricultural intervention fund	**Prague**
The state testing place for agricultural, food and forest machines	**Prague**
The institution for the forest economic improvement	**Brandýs nad Labem**
The institution for agricultural and food informations	**Prague**
The army woods and estates in the Czech Republic	**Prague**
The evolutionary and research forest institute	**Prague**
The research institute of the forest economy and the hunting	**Jíloviště-Strnady**
The research institute of meliorations and the protection of the land	**Prague**
The research institute of the vegetable production	**Prague**
The research Silvy Taroucy for the region – the ornamental gardnering	**Průhonice**
The research institute for the animal production	**Prague**

Source: *Sylva Bohemica - kalendář.* Praha: Bohemica, s.r.o., 2004. 60 s.

2.2. The summary of forest companies

Table 5: *The summary of forest companies*

AGROS spol. Ltd.	**Český Těšín**
AGROWALD, Ltd.	**Rožmberk**
CE WOOD	**Zlín**
The wood and forest company, Ltd.	**Most**
Forsythia	**Slabce**
Forest company in Frenštát	**Frenštát pod Radhoštěm**
Forest company in Hanušovice	**Hanušovice**
South – Bohemia forests in České Budějovice	**Nové Hrady**
The forest cooperative in Železné Horky	**Železné Horky**
The forest service in Rakovice	**Rakovice**

The forest company Broumov Holding	Broumov
The forest company Františkovi Lázně	Františkovi Lázně
The forest company Královský Hvozd	Nýrsko
The forest company Ledeč n S.	Ledeč nad Sázavou
The forest company Litoměřice	Litoměřice
The forest company Nové Město n. M.	Nové Město na Moravě
The forest company Opočno	Opočno
The forest company Planá u Mar. Lázní	Planá
The forest company Přestice	Přestice
The forest company Stříbro	Stříbro
The forest company Telč	Telč
The forest company Teplá	Teplá u Toužily
The forest company Železná Ruda	Železná Ruda
The forestry Vitriolka	Bečov nad Teplou
The forest in Mladá Boleslav	Mladá Boleslav
The forest in Pelhřimov	Pelhřimov
Rokyta´ forests	Kounov
The forests in Rožnov	Rožnov pod Radhoštěm
LST	Trhanov
NEVDĚK, spol. Ltd.	Žlutice
Novák Oldřich	Valašské Meziříčí
The forest company in Opava	Opava
The forest institution	Vrbno pod Pradědem
REKULTIVATION	Most
SILVA SERVIS	Stará Ves
SILVA-K	Lomnice nad Lužnicí
The private forest management in KLÁŠŤOV	Vizovice
TILIA PLUS, Ltd.	Liberec
TILIA, Ltd.	Vamberk
UNILES	Rumburk
The forest company in Zábřeh	Zábřeh na Moravě

Source: *Sylva Bohemica - kalendář*. Praha: Bohemica, s.r.o., 2004. 60 s.

2.3. The summary of forest in municipalities and towns

Table 6: *The summary of forest in municipalities and towns*

Town forests Domažlice	**Domažlice**
The forest Karlovy Vary	**Karlovy Vary**
The forest cooperative in Štoky	**Štoky**
The forest company of communities	**Bystřice pod Pernštejnem**
The forest management in Kamenný Újezd	**Kamenný Újezd**
The forest management in Krnov	**Krnov**
The forest authority in Děčín	**Děčín**
The forest authority in Jáchymov	**Jáchymov**
The forest authority Bochov	**Bochoc**
The Forests – water, Ltd.	**Pilníkov**
The forest and parks in Trutnov	**Trutnov**
The forests and fisheries in Velké Meziříčí	**Velké Meziříčí**
The forests and fonds in České Budějovice	**České Budějovice**
The forests in Bělá pod Bezdězem, Ltd.	**Bělá pod Bezdězem**
The forests of the vapital city Prague	**Prague**
The forests in Komňa, s.r.o., the forest company Rasová	**Koma**
The forests in Český Krumlov Ltd.	**Český Krumlov**
The forests in Písek, Ltd.	**Písek**
The forests in Rokycany, Ltd.	**Rokycany**
The forests in Stříbro	**Stříbro**
The forests in Šumperk, Ltd.	**Šumperk**
The forests in Loket, Ltd.	**Loket**
The town Český Brod	**Český Brod**
The town Horní Slavkov	**Horní Slavkov**
The town Chýnov	**Chýnov**
The town Jílové,	**Jílové**
The town Mšeno,	**Mšeno**
The town Polička,	**Pomezí**

The town Řevnice,	Řevnice
The town Třebíč	Třebíč
The town Zubří	Zubří
The town forests and ponds in Kutná Hora	Červené Janovice
The town forests and verdure Ltd.	Valašské Meziříčí
The town forests in Beroun	Beroun
The town forests in Doksy, Ltd.	Doksy
The town forests in Hradec Králové	Hradec Králové
The town forests in Klatovy	Klatovy
The town forests in Kostelec nad Orlicí, Ltd.	Kostelec nad Orlicí
The town forests in Kraslice, Ltd.	Kraslice
The town forests in Litoměřice	Litoměřice
The town forests in Rožnov, Ltd.	Rožnov pod Radhoštěm
The town forests in Znojmo	Znojmo
The town authority in Chotěboř, the management of forests and ponds	Chotěboř
The municipality Benešov nad Černou	Benešov nad Černou
The municipality Bernatice, the management of forests	Bernatice
The municipality Bojanov, the management of forests	Bojanov
The municipality Boží Dar, the management of forests	Boží Dar
The municipality Jistebnice, the management of forests	Jistebnice
The municipality Křesetice	Křesetice
The municipality Panenská Rozsíčka	Panenská Rozsíčka
The municipality Rataje	Rataje
The municipality Strážíc, the management of forests	Janovice nad Úhlavou
The municipality Turovec	Turovec
The municipality forests in Bludov, Ltd.	Bludov
The municipality forests in Chroboly	Chroboly
The municipality forests in Cejle, the management of forests	Cejle
The municipality forests in Opařeny, the management of forests	Opařeny
The town forest in Ostrava	Ostrava-Zábřeh

The plánské forests, Ltd.	Planá
The municipality forests in Czech Republic	Pelhřimov
The management of forests in Tábor, Ltd.	Tábor
The management of forests and technical services in Budišov nad Budišovkou	Budišov nad Budišovkou
The management of town forests in Choceň	Choceň
The management of town forests in Janově	Litvínov-Janov
The management of town forests in Kolinec	Kolinec
The management of forests in Drnovice	Drnovice
The statutary city in Zlín, The labour union of town verdure	Zlín
The town forests i Sušice, Ltd.	Sušice
The technical service in Havlíčkův Brod	Havlíčkův Brod

Source: *Sylva Bohemica - kalendář.* Praha: Bohemica, s.r.o., 2004. 60 s.

2.4. The summary of private forests

Table 7: *The summary of private forests*

B.F.P., T. Bata´s forests and estates, Ltd.	Loučka u Val. Meziříčí
Ing. Jerome Colloredo-Mannsfeld, forest and fisheries	Zbiroh
Jan Sečkař	Lipov
Křídlo, s.r.o., the forest estate	Hlinsko p. H.
The forest cooperative in Domanín	Bystřice nad Pernštejnem
The forest cooperative in Železných Horkách	Železné Horky
The forest cooperative in Chmelno	Pelhřimov
Jíloviště forests	Jíloviště
The Knight Stangler´s forests, v.o.s.	Lučice
MP forests, Ltd.	Benešov u Boskovic
MVDr. Radoslav Kinský	Žďár nad Sázavou
The estate in Bechyně, a.s.	Sudoměřice u Bechyně

The owner´s union of forests and the investor´s union in the forest economy	Praha
The owner´s union of the forest in Hlavačov	Kostelec nad Černými lesy
The owner´s union of the singulary forest	Uherský Ostroh
Mgr. Cuhry´s forest management	Písek
The estate Doubravka, Ltd.	Chotěboř
The Bartoň´s estate in N. Město nad Metují, Ltd.	Nové město nad Metují
Václav Stome – forests, Ltd.	Přelouč

Source: *Sylva Bohemica - kalendář*. Praha: Bohemica, s.r.o., 2004. 60 s.

2.5. The summary of institutions, which use LES programme for a creation of projects in the forest activities:

Table 8: *The summary of institutions*

A member of firms	Institutions using LES programme	A member of installations
1	The Forests in the Czech Republic	139
2	LS Brno	2
3	Div.Tišnov	3
4	The forests management in Nové Město	7
5	The forests management in Jaroměřice	8
6	The forest company in Vsetín	5
7	The forests management in Telč	5
8	The forests management in Strážnice	6
9	SML Jihlava	1
10	Div. Bystřice	1
11	VLS Prague	37
12	The forests management in Hradec Králové	4
13	The forests management in Brumov	6
14	TILIA Albrechtice	7

15	Bor a.s.	7
16	ML Dvůr Králové	1
17	OL Pilníkov	1
18	Police nad Metují	1
19	ML Dobřany	1
20	ML Kostelec n/O	1
21	The forests management in Komňa s.r.o	1
22	LČR Židlochovice	2
23	The forests of the capital city Prague	1
24	Div. Luhačovice	1
25	LS Přibyslav	7
26	Div. Znojmo	7
27	MZLU Brno LF	1
28	LS Bučovice	1
29	The forests management - Zbořil - Tomeš	1
30	The forests management in Krušné Hory	21
31	The forests management in Žatec	2
32	The forest company in Frýdlant	1
33	LM Brna	1
34	SLŠ Hranice	1
35	VS Slavkov	1
36	The PRO Lenc firm	1
37	LS Buchlovice	1
38	MS Soběslav	1
39	ML Val. Meziříčí	1
40	MÚ Kopřivnice	1
41	SLS Klášťov	1
42	The forests management in Krnov a.s	8
43	SLŠ Písek	1
	A number of installations attogether	*311*

Source: LEKTA service, Ltd.

4. A difference in a method of taking advantage of the programme in the Czech Republic and Slovakia.

3.1. The taking advantage of the programme in the Czech Republic

There 311 installations in the Czech Republic and it is in these subjects:

- The Czech forests
- Stock compaies
- Communial forests
- Army forests
- City forests

The Army forests uses this programme fully, because they manage differently than The Czech forests and The Stock companies. The communial forests can also use this programme fully. I the work in forests is executed by order, it means, that the state, the Czech forests orders a work to stock companies and the using of this programme is of orientation only.

The Czech forests has gone out in the last years from overage worths only, which have been made for all economical unitor. This is influenced by a price offering the stock company or what price is requested by the Czech forests.

4.1.1. An example:

Nowadays, there is so situation, that The Czech forests pays to a stock company 4000 CZK – 8000 CZK for a hectare for same activity. A stock company get money and ask private persons to do this work for about 2500 CZK. If the work is pay by this way, it cannot be done too qualitativly. So it comes to negative impacts in forest. If this subject a stock company, has not been the interlink and the Czech forests would give a work to smaller subjects to private persons directly, a quality of a work would increase and the forest economy will have been on a higher level.

The Czech forests uses LES programme in its establishmnets orientationaly. In the Czech Republic, there is used a substance, which has been made according to function norms and norms of the work consumption in the forest economy to 1989. There are requests for new forms to be as a basis for calculations (but it is not possible make agreement with reparate subjects, which share with it).

Nowadays, the Czech forests thinks, that about 40% of wood material will sell in its own overhead. There have come conflicts between the Czech forests and stock companies, which try to solve it by strikes. Forests have started to step arid from average worths and it will be used executed norms of the work consumption more for the forest economy in the Czech Republic. It is needed for this to use the LES programme more, which had to be increased about norms of the work consumption on the basis of technological processes and mechanizal means. But it has not been solved in the Czech Republic completely.

There has been an imagine of this subject with the LEKTA service would have discussed:

A work with concern function norms will be supply for example from finances of the ministry of agriculture and all there subjects will give norms of the work consumption for its own need gratis.

It is "treated" in many states in European union by this way.

3.1.2. Forest Land

Forest land has increased about 0,04% every year. This increasing with the different intensity has continued without a break from the thirty years of the 20. th century.

Table 9: *Changes in forest land area (ha)*

	2000	2001	2002	2003
Forest land area	**2 637 290**	**2 638 917**	**2 643 058**	**2 644 168**

Source: Czech Statistical Office

3.1.3. Forest Stands

The average area of units of the area dividing of the forest has reduced in the last ten years continuously.

The average area of orientation units of the area dividing of the forest growths have 4,18 of hectares. The average area of describing units is 1,22 of hectares. It means, that the average area has reduced to 78% during last 5 years.

This trend is made by increasing of petty forest estates and its scattering.[3]

Table 10: *Average size of forest management units (ha)*

YEAR	Average area			
	Compartment	Subcompartment	Forest stand	Inventory unit
1997	51, 63	-	9, 93	2, 23
1998	43, 81	8, 92	7, 89	1, 56
1999	42, 20	8, 76	6, 90	1, 48
2000	40, 08	8, 47	5, 58	1, 36
2003	34, 17	7, 49	4, 18	1, 22

Source: Forest Management Institute

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[3] *Zpráva o stavu lesa a lesního hospodářství: Stav k 31. 12. 2003*. Praha: Ministerstvo zemědělství ČR, 2004. s. 37

4.2. The programme in Slovakia
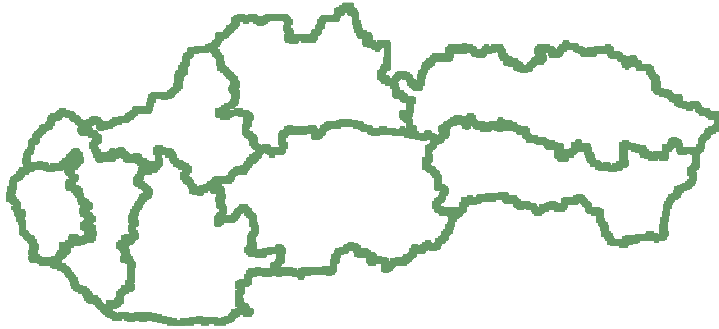
In Slovakia, there has stayed an original separating:

- Managements
- Separate establishments
- The Slovakia forests – controlls all activities in forests centraly

It is used in particular legal and physical subject for definite works, because it is not possible to make this safe from its own sources in some regions There are for example skilled workers working in the Czech Republic or in the other states of European union only. In Slovakia, there is it possible to use LES programme in a bigger measurement.

Nowadays, it is used in separate establishments. It would be more advantageous, if this programme has been on the smalest article, where it is worked with function norms more. The firmy assumes, that the using of programme would have to be enlarged also on the smallest article – forest managements, where has passed a making of projects.

Forest are the basis of the life on the Earth and it is important protect forests and look after it. One of the form to make forests safe is an area protect, which law defines as a protect of natura and landscape in a particular region.

A purpose of the forest protect is a saving of conditions and forms of life on the Earth to make conditions for permanent keeping reclaiming and rational using of natural sources a saving of natural herikage a keeping of the ecologycal stability. The law has set five protect degrees down to this purpose: The first degree is an universal protect and it is valid all over the Slovak Republic. The meaningful or endargering parts of the nature and the landscape we can name a protect territory and it is divided into these categories:

- **The protect scenic area** - **the second degree of a protect**
- **The national park** - **the third degree of a protect**
- **The protect area** - **the fourth degree of a protect**
- **The natural reservation** – **the fifth degree of a protect**
- **The natural monument** – **the fifth degree of a protect**

The main function of forests is a conserving function and it is very important for protecting function and it is very important for protection of nature. Its aim is a keeping of representative ecosystems for scientific purposes and as a basis of a stability of renovation of ecosystems.

The calamity minings are a big problem for the Slovakian economy. Its rests in a breaking of a planned mining by it, that it is needful to exploit a mine in regions affected by natural calamity – They are usually made by wind, avalanches, frost, dry atmosphere, landship.

A good example is an *ecologycaly catastrophe in the Tatras* in Slovakia. A whirlwind, which went over the Slovakia has destroyed a lot of growths. The Tatras national park (TANAP) has been destroyed the most. For a long time lasted emergencing wind has changed the largest and the oldest Slovakian national park into destroy and hardly coming region. This wind has broken so many trees as Slovakia mines in one year, normally. This calamity situation has made many factors because there has been a had disposing of a natural environment in the Tatras region. The man – made monocultural forest has not goined over on extreme climatic changes and it has been also enfeebled by inconvenient system of the forest economy. It is interesting, that the natural growths in the Tatras national park, has stayed inviolable nearly. It become on places, where has never been people´s intervention.[4]

[4] http://www.zpravodaj.cz/dpg_m92403.htm
 http://zeme.mysteria.cz/view.php?cisloclanku=2004112501
 http://www.lesoprojekt.sk/lesop_tour/subory/kateg.html

4. The analysis of the supply and the demand of the software equipment in the Czech Republic and in Slovakia

4.1. The analysis of the supply

In the Czech Republic is the supply in one version of this programme, only. There are not another programmes, which make database programme of norms of the work consumption of which are engaged in analysis of the working process, excepting LES programme.

In Slovakia is the similar situation. Here are databasis and the programme actualized every year. At the last time, the programme has geared to work with cableways which are made in the Czech Republic. Then there were national function norms for the wood transporting by transport sets equiped by different typer of hydraulic hands.

These norms programme is used within the framework of firms, where is installed.

The firm LEKTA service, Ltd., asumes, that it could be used not only in Slovakia:

- o Army forests
- o Communial forests
- o City forests
- o Private forests

Communial forests in Slovakia have large first areas in many cases, which they cover. It si also possible to use this very LES programme for these subjects.

4.2. Analysis of the demand

   To find out, how is the demand of the LES programme in forestry companies, we have carried a research out in these companies.

   We have worked a questionnaire up and it was sent in to companies by the internet and companies sent as competed questionnaire, back. We have wanted to find out, if forestry firms need and want use the forestry software for making projects in forest activities. We have been interested in, if there was used same programme sometimes or if they make projects handly. If they want change a method for making projects and if they have got good acces to norms of the work consumption.

   When we put informations from questionnaires in to the graph, we have got lucid informations about a method for making projects in the forestry activities. If the firms in the forestry are interested in LES programme.

4.2.7 The specific method how to process projects

It is possible to use a computer with the forestry software for processing of projects, which makes to deposit data and make calculations possible easily. There programmes make a work easy and serve for accessibling of actually databank of national valid function norms in the forest economy and also for its direct applications or for project processing in conditions of concrete growths. There is the need possibility how to process projects – by hand, but it is an elaborate and slow work.

The graph 1: *The specific method how to process projects*
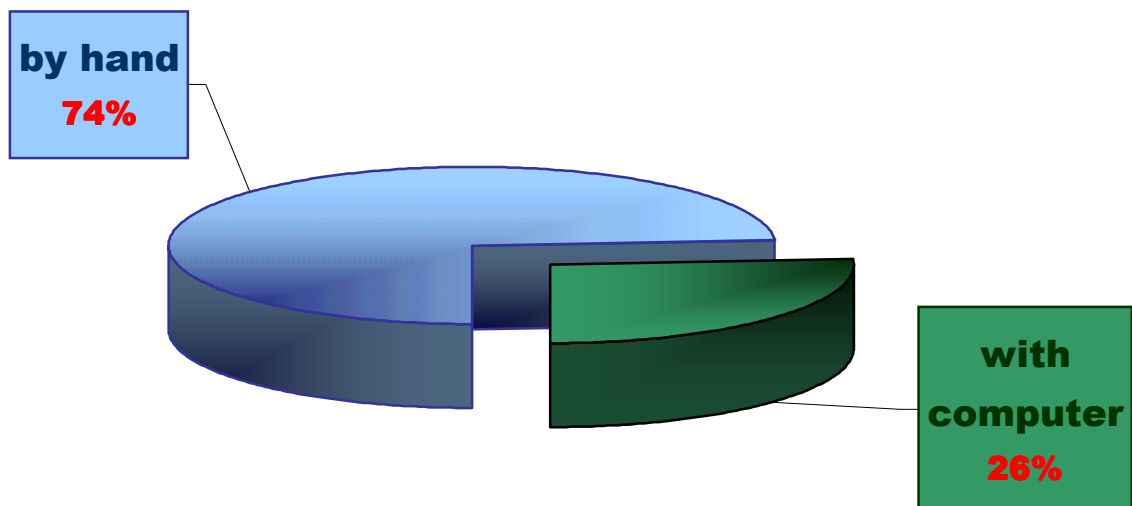
Source: Personal research

74% of firms work pojects up by hand, *26% of firms* process projects with forestry software in computer.

A work of firms must be exactingen time and uncomfortable, where are projects worked by hand up.

It would be very good to install a programme LES in these firms, because its work will be changed and project processing would be faster and a looking for a needed data, which are registered in a programme into database would be also easier.

4.2.2. The specific method of available norms of the work consumption

Norms of work consumption serve as a basis for calculations mainly. It is not only for workers rewarding according to function norms.

Mainly, it serves for firms to define how many workers are needed, how much time takes this work and how much money it will be cost. On the basis, there are made projects in the forest economy. The availability of norms of the work consumption is very important for making of these projects. These norms are accessible easy and the work is faster and easier, if we use the programme.

The graph 2: *The specific method of available norms of the work consumption*

firms have not norms available 67%

firms have norms available 33%
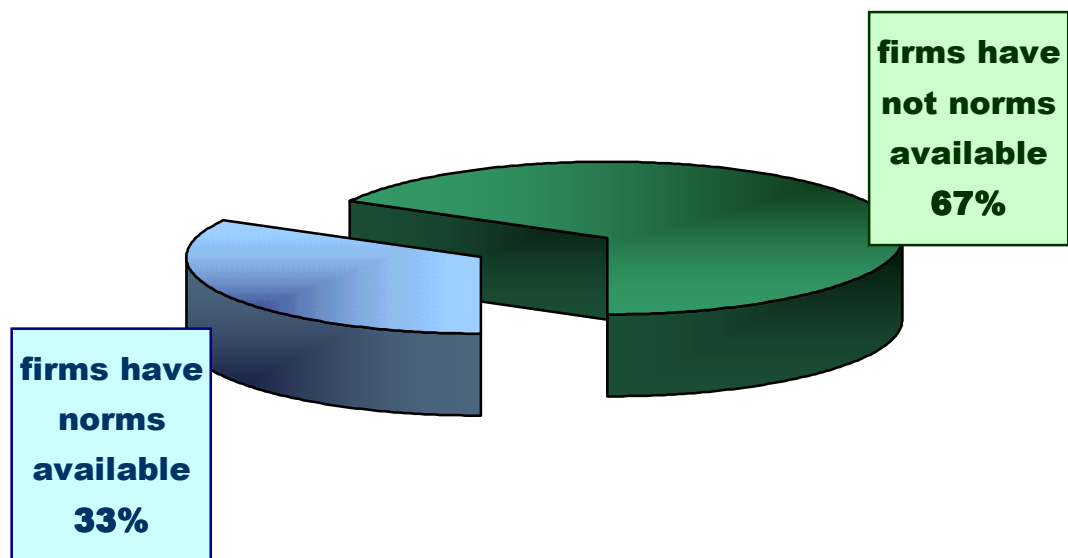
Source: Personal research

67% of firms answered, that they have not norms of work consumption available, *33% of firms* have these norms available.

So, we can say, that the most of firms have problems with available norms of work consumption and it is not easy for them to make projects, than for firms, which have these.

An installation of LES programme is a solution for this probleme and it simplifies a work and norm of work consumption will at disposal in this programme.

4.2.3. The necessity to change a method of the work for processing of projects

In this point we are interested in, if firms need some change in its concern. It involves processing of projects in forest activities and if it is found out, that the change is needful. The LEKTA service, s.r.o., can offer to firms LES programme, which gives guarantee to this change can influence an enterprise of firms positivly, making of projects is paster and the work in forest activities is better.

The graph 3: *The necessity to change a method of the work for processing of projects*
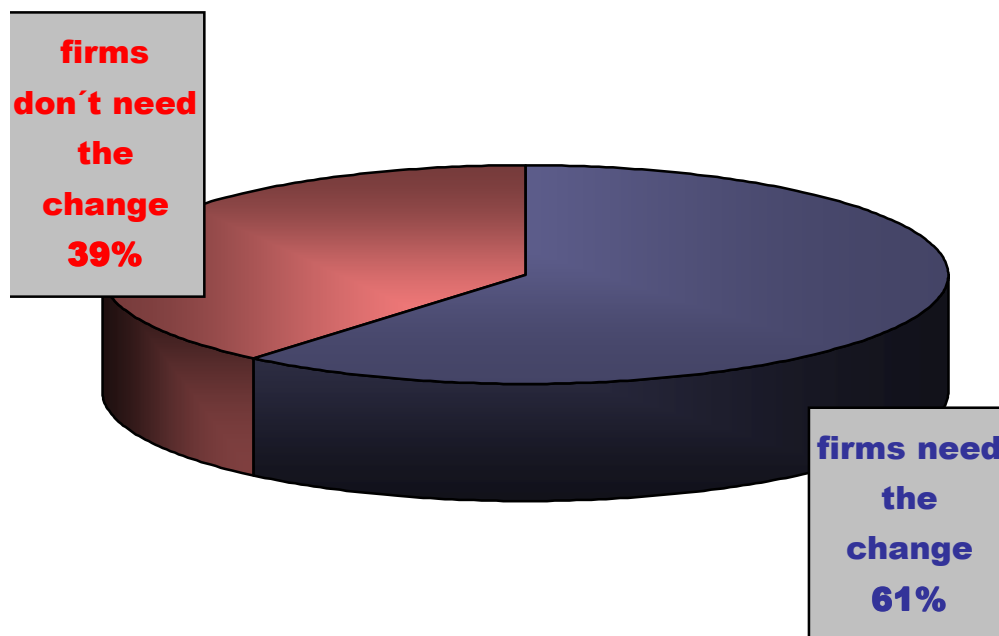
Source: Personal research

The graph informs us, that *61% of firms* answered, that the change is welcome, *39% of firms* don´t need the change. More than a half of firms is ready to change its own method of work form making of forest projects by some other way.

Here is a posibility how to change and make better a work for making of projects in the forest economy. It is an installation of LES programme. This programme gives guarantee many advantages which estimate users and people, who make projects.

4.2.4. The specific method of changes in the firm

In the last point we have engaged in a question, if the firms need a change in its forestry activities. In this point we are going to try to delete about a determining, how change imagine these firm. If they want to speed up the work, make project easier, want to transfer its data into the computer with the forestry software or if they want have better acces to norms of the work consumption. Less programme enables this all and if it is installed, in firm would be gone to all these changes.

The graph 4: *The specific method of changes in the firm*
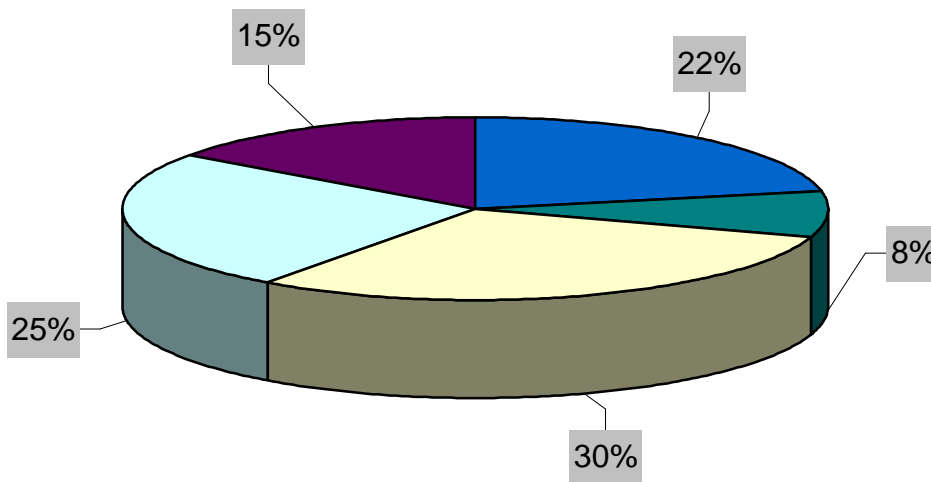
Source: Personal research

15% of firms have vote for a variant – a lucidity . The LES programme would enable to order to these firms all data and in this way try to solve to these firms with unlucidity.

22% of firms need transfer data into the programme.

25% of firms   want to be better in an acces to norms. There would be a solving, if they would us the LES programme, which serves for an entrance into actually databank of national valid function norms in the forest economy.

8% of firms would welcome to speed up its work.

30% of firms   say, that the needful change is a simple making of projects for them. And also here we find a way out in LES programme, which is able to work with data of economical plans and it acquires and processes its own data. Calculation of economical plans make base projects of activities in record-huping grouwth, detaily and fully, with a proposal of useful technologies.

4.2.5. The specific method – if the norms of work consumption are better in the electronic form

It is important to appoint an amount of people´s work for objective appointing of conditions and for work in forest economy by help of working up of function norms. These norms of work consumption serves as a basis for calculations, mainly. There are made projects in the forest economy on the basis of it. It is very important, if you make a project, how the norms of work consumption are accessible. We are interested in, if the firms think, that the norms of work consumption are advantageous in the electronic form.

The graph 5: *The specific method – if the norms of work consumption are better in the electronic form*
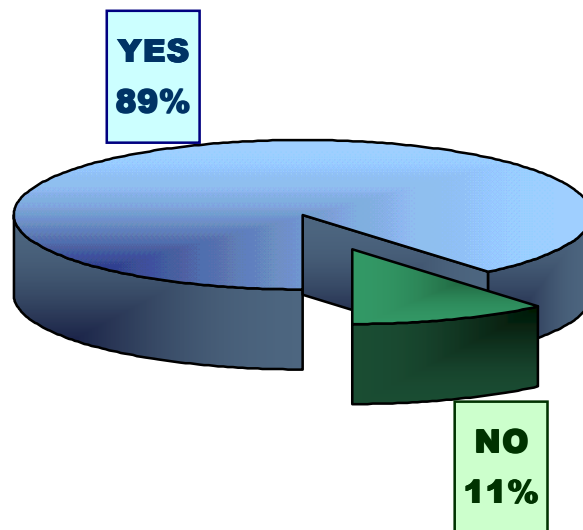
Source: Personal research

89% of firms answered, that it is advantageous to use norms of the work consumption in the electronic form. In each case, this electronic form is more easier for making projects and calculation in forest economy.

Only 11% of firms answered, that it is not advantageous to use norms of the work consumption in the electronic form. It means, that these firms have already had well-established and well-tried system for using of norms of the work consumption. That is why for them is not important in which form are these norms of the work consumption.

4.2.6. An interest in LES programme

The main point of all the research has been ascertain, if the firms want own LES programme . There were written advantages for making projects in the forest economy in the previous points. We could assume accoiding to previous answeres in firms, that there is an interest in this programme. Because the work is easier and well arranged.

The graph 6: *An interest in LES programme*
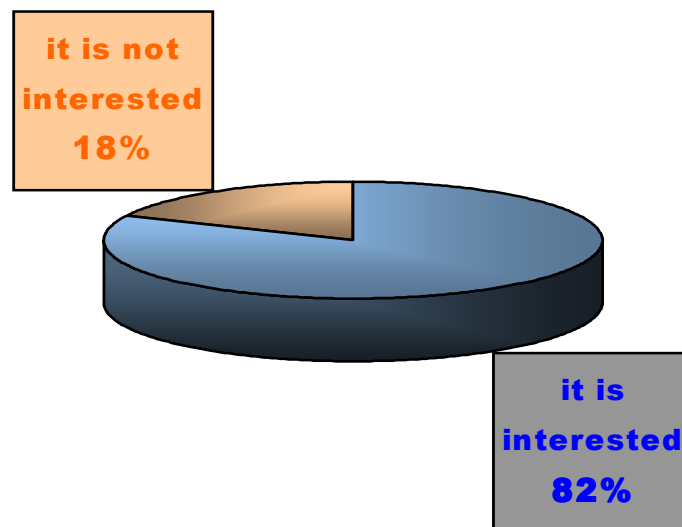
Source: Personal research

82% of all asked firms are interested in this programme. Only 18% is not interested in it.

The research has proved, that forestry firms are interested in forestry software. It means for the firm – LEKTA service, Ltd., that on this demand it can reach to supply. A firm offers this programme by present form in the concern, mostly.

That is why to show, what can this programe and how makes work easier for making of projects in the forest economy.

5. Client´s activity before and after delivering of the software

5.1. Client´s activity before delivering of the software

We can divide clients into several groups:

In the first group, there are people, who need this programme, they are interested in it and they are usually users of large areas. They do not use computer for their work, but they want change it and overgo on making of projects by help of a computer and a respective programme.

In the second group, there are people who would, like to own this programme, but the big problem is a price of it and they are not sure, if they could use the programme fully. They are usually users of smaller forest areas.

In the third group, there are people without respect to the computer and they respect work with programmes. They make programmes by hand and they do not want to change this. At the some time they know that their work is longer and less effective.

The making of projects is more demanding before delivering of software.

5.2. Making projects after delivering of the software

Clients spare a lot of, if they use LES programme for making projects. Firm also pursues a teach – in for staff. It is within the framework of services included in price of the programme. It is necessary from workers to pass each functions alone by means of autostudium. That is why because this programme attend usually workers, who do not work with a computer so often. Of course, there is a connection between a firm and clients.

A firm helps with questions and reminders at any time.

Software enables us to make different groups for contingent production and consecutive check – up of pursuing operations. It contains a database of all norms of the work consumption which are used in forest economy and it is possible to get these norms in the print form.

A firm can use this programme for making projects including of charges. For this purpose are used *groups*.

Examples of groups:

- Number of areas for afforesting
- Number of seedlings according to each areas
- Prices of seedlings
- The other charges

We can also find a booking list for working groups in the programme. Here can apply different types of rewards for workes:

➢ Job wage

➢ Price – work wage

Firms can use programme for sumarization within the framework of each sections and for merging of data from forest section to general management.

Next possible activity, which can firms make with the programme:

- A plan of a number of workers
- A plan of charges
- A plan of mechanical means according to each alternatives
- A time breakdown

A programme is possible to use for example in firms, where is crude wood made. Whole deliveres of crude wood has increased about 5 99 000 m^3 to whole elevation 15 140 m^3 between a year, delivers of conifer wood has increased to 13 660 m^3 and delivers of leafy wood to 1 480 m^3 .

There has been an accrual of delivers at conifer wood about 6 50 000 m^3 between a year. Delivers at leafy wood has gone down about 51 000 m^3.

An accrual of whole deliveres of crude wood has been made by fortuitous mining mainly and by struggle to get needful financial resources even over the decline of realizating prices. In the domestic market with crude wood its increasing offer of forest´ owners and other subjects selling wood has exceeded a demand from the side of domestic makers in the wood – working industries substantially. This has conduced to a next decline of prices.

Above all, in areas near to borders of Czech Republic and the Slovakia and Austria it has come to increasing of an export, particullary for conefer round assorments.

5.2.1. Prices of wood

Average prices has gone down a deciding assorments in the domestic market again. An average price of spruce round hole has gone down about 9,1% in the class of III. A quality among the year and about 11,1 %; in the class of B quality. The bigger dicline has been in assortment of pine wood get (11,1 % a 12, 7%).

At the fibre and the other industrial wood has average prices also gone down during the year. It has been at spruce wood – about 10,7 % and at assortments at pine wood about 14,1 %.

There also has been a decline of average prices at assortments at leafy wood – about 9,2 %. Prices of fuel has been the some.

5.2.2. Export and import of crude wood

Nowadays, export and import of crude wood is not regulate by law improvement. Only for export of choose assorments (round and fibre wood) are submited named automatic licence which are used for supervision of export amount. Export and import is fully liberal and it is registered in the customs statistics.

 An conspicuous surplus of crude wood in the Czech market has had an increasing of a volume of the export of crude wood by its going down of its import as a consequence.

Export of crude wood has increased about 868 000 m^3 during the year. This increasing has been marked at spruce round wood (about 597 000 m^3) and at spruce fibre (about 92 000 m^3). Import has gone down about 521 000 m^3 according to last year. The

decline has been marked at conifer round wood, about 65 000 m^3, at conifer round fibre (about 250 000 m^3) and at leafy fibre (about 114 000 m^3).

An active balance of the foreign trade with crude wood has increased on valut 4,3 bilions CZK. In EU countries (mainly austria and Germany), there has been exported 97,0% of the value of the whole export. In CEFTA countries only 1,5%. Also the import of crude wood has been realized from EU countries (41,8% from the value of the whole import, the most from Germany) and from CEFTA countries (34,9% the most from the Slovakia and Poland).[5]

Picture 2: *Export and imports of roundwood (1,000. m^3)*
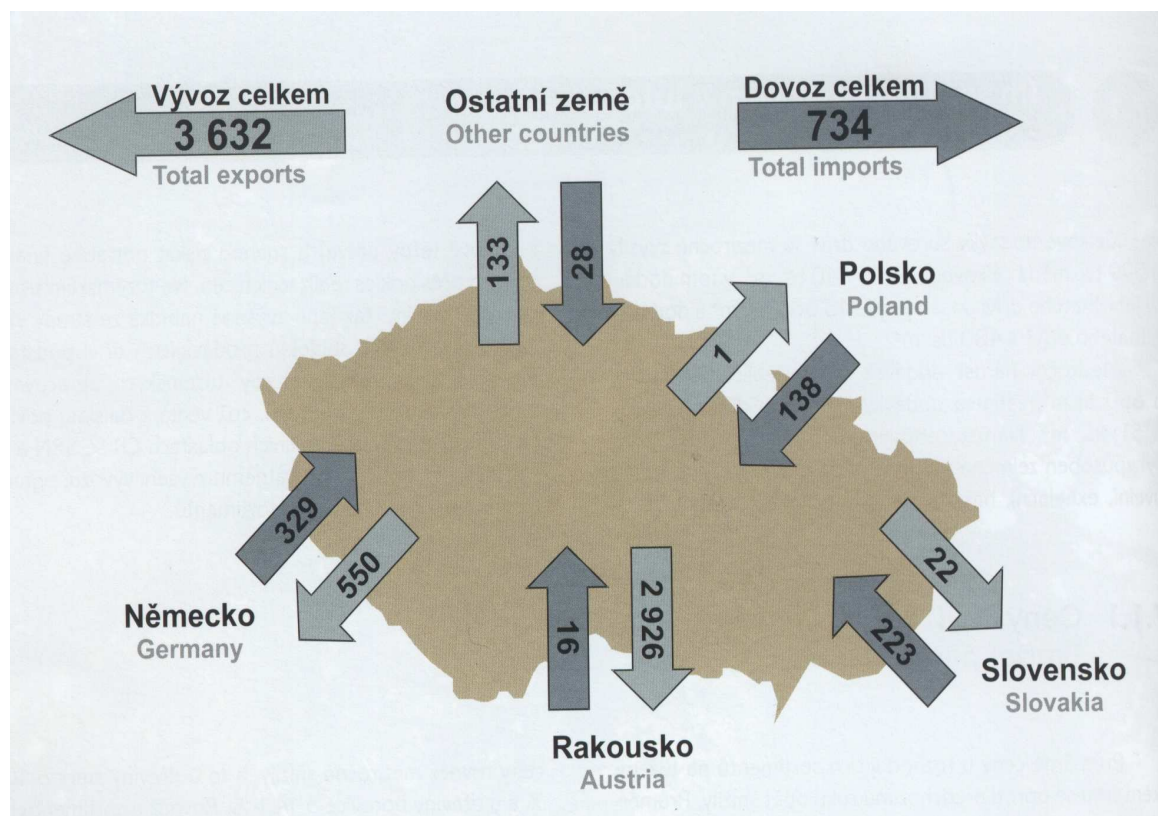
Source: Czech Statistical Office

[5] *Zpráva o stavu lesa a lesního hospodářství: Stav k 31. 12. 2003*. Praha: Ministerstvo zemědělství ČR, 2004. s. 71 - 72

Table 11: *Exports and imports of roundwood in the CR*

	Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports
	Mil. CZK			1000 m^3			Average price CZK/ m^3	
Total	**5 640**	**1 300**	**4 340**	**3 632**	**734**	**2 898**	**1 553**	**1 771**
Of which								
EU	5 472	544	4 928	3 540	364	3 176	1 546	1 494
Germany	819	491	328	550	329	221	1 489	1 492
Austria	4 579	16	4563	2 926	16	2910	1565	1000
Italy	66	-	66	40	-	40	1650	-
CEFTA	82	454	-372	56	369	-313	1464	1230
Slovakia	25	283	-258	22	223	-207	1136	1269
Slovenia	32	6	26	29	2	27	1103	3000
Hungary	23	18	5	4	6	-2	5750	3000
Poland	2	147	-145	1	138	-137	2000	1065

Source: Czech Statistical Office

6. The proposal of a marketing plan for the sale of the software for the Slovakia

6.1 The marketing plan

The planning process belongs to the basic marketing activities and the marketing plan is respected as its basic document. The creation of this plan is divided into the proposal of the strategy and into the realization of the strategy.

The basic stone are marketing analyses for proposal of the marketing strategy. If we are ready with all needful analyses and its entrances, we can pursue **SWOT** analysis, where run confrontation of **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats. This SWOT analysis is a key basic for setting up of alternative proposals of the marketing strategy.

The marketing planning is closely connected with strategy planning. A firm defines its mission in it, assigns an area, where will a firm make business. LEKTA service, offers providing and actualizations of data sets of norms in the forest economy in the Slovakia, needful for business of the programme systeme LES of firm HESTA.

The important part of invoices will be the list of changes for actualization of norms. The actualization will be pursued if it will be needed or once a year. The next important part of the strategy planning is an analysis of the setting, where the firm will be operate.

The marketing plan differ from strategy plan. The marketing plan more intents on a concrete product/ market and breaks out more detailed marketing strategies for reaching for aims for the product/ market, nevertheless, the marketing as a inquiry into a market provide informations and recommendations for strategy planning. And we can say, that the strategy and marketing planning are closely connected with together very much.

The firm has got the aim to get the forest software in the Slovak market and into companies, which are interested in forest activities in the Slovakia.

There belongs these forest establishments:

- o The army forests
- o The country forests
- o The urban forests
- o The private forests
- o The Slovakia forests

The firm wants address concerns by the way, that the firm will send offers to concerns with the possibility of the programme **presentation.**

If concerns will be interested in it, the firm will do its realization. The aim of this presentation is to show to concerns advantages of the forest software for making projects. People, who are interested in it can examine the programme alone and make sure about its abilities. If they are really interested in it, there could be made a trade agreement. Its illustration is mentioned in the inset. There is next phase after the making a trade agreement and if we pay all charges – the plase is an installation of the programme into the computer equipment in the concern.

The istallation is simple for common user of the computer, too. But it is better, if the installation is made by an expert. It is the best, if the installation is made by an expert from the firm, but the firm also offers a teach – in for workers. That is why to use the programme faster and use the programme the best for making projects and calculations. Because it is very important for a work in the forest economy.[6]

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[6] http://www.zpravodaj.cz/dpg_m92403.htm

6.2. The statement of forest companies in Slovakia

If the firm sets up a marketing plan, it is important to define concerns, where will be the forest software offered.

Table 12: *The statement of forest companies in the Slovakia*

AGROSILVA	PIESŤANY
AQUAPOND - Ing. Jan Bartal	Orechová Potôň
BAKUP	HUMENNÉ
BALATI	TREBEĽOVCE
BELANEC	RUDNIANSKA LEHOTA
BENEDIK	SMOLNÍK
BOŽIK	BÁNOVCE NAD BEBRAVOU
BRANŽOVSKÝ	PRIEVIDZA
BRAUNER	DEVÍNSKA NOVÁ VES
BÖHMER	MALUŽINÁ
COMI	STROPKOV
DEMIKO	ČEČEJOVCE
DŘEVOSAD	JOVSA
DUO KB, Ltd.	STROPKOV
EKO, Ltd.	BARDEJOV
FAGUS, Ltd.	KRUPINA
FORESTA, Ltd.	LOVČICA-TRUBÍN
FURAJTÁR	MARGECANY
FUTEJ	RAŽŇANY
GARGUŠ	GEMERSKÁ POLOMA
GELNICKÉ FORESTS, Ltd.	GELNICA
GLEVAŇÁK	ČERVENÝ KLÁŠTOR
GOSTÍK JOZEF	LIESEK
GUDA company	BLHOVCE
HARMANIAK	ZVOLEN
HG LES, association	JASOV
HUBAYOVÁ	TORNAĽA

Igor Boledovič - I B O	Trenčín
INOVEC- THE FOREST ECONOMY, Ltd.	SELEC
INTERLES SLOVAKIA	RUŽOMBEROK
JANOUŠ A SPOL., Ltd.	SUKOV
JUHÁS	ŠIROKÉ
JURDOVÁ	PÚCHOV
KOHÚT – THE LAND ASSOCIATION	RUDNIANSKA LEHOTA
KREDBA PRIVATE FORISTS, Ltd.	HUMENNÉ
LACHIM	VEĽKÉ KAPUŠANY
LARI, spol. Ltd.	Piešť
LAURUS SLOVAKIA, Ltd.	BRATISLAVA
LEDO	ŠTÍTNIK
LESEKO, Ltd.	PRÍBOVCE
KOMPOSESORÁT, Ltd.	PARTIZÁNSKÁ ĽUPČA
THE FOREST ESTATE	HRÁDOK NAD VÁHOM
THE FOREST – FIELD – ECONOMIC ESTATE	ULIČ
LESOS	HANDLOVÁ
LESOSTAV NITRA	NITRA
LESOTAXÁCIA	ŽILINA
LESPOL, Ltd.	PUKANEC
LESPRO, Ltd.	PREŠOV
LESSAD, Ltd.	BRATISLAVA
LESU	KRÁĽOVA LEHOTA
THE FORESTS IN BRATISLAVA, THE STATE CONCERN	ŽELIEZOVCE
FOREST - WOOD, Ltd.	ŽILINA
THE TOWN FORESTS IN BREZNA, Ltd.	BREZNO
THE TOWN FORESTS IN LOVČA, Ltd.	LOVČA
THE TOWN FORESTS IN SPIŠSKÁ NOVÁ VES, Ltd.	NOVOVESKÁ HUTA
THE SLOVAKIA FORESTS, STATE CONCERN	BRATISLAVA
THE SLOVAKIA FORESTS, STATE CONCERN	TRENČÍN
THE SLOVAKIA FORESTS, STATE CONCERN	ROŽŇAVA

THE SLOVAKIA FORESTS, STATE CONCERN	BEŇUŠ
THE SLOVAKIA FORESTS, STATE CONCERN	BANSKÁ BYSTRICA
THE SLOVAKIA FORESTS, STATE CONCERN	ŽILINA
THE SLOVAKIA FORESTS, STATE CONCERN	ŠAŠTÍN-STRÁŽE
THE SLOVAKIA FORESTS, STATE CONCERN	LIPTOVSKÝ HRÁDOK
THE FORESTS IN TRENČÍN	PRIEVIDZA
LÍŠKA	BRATISLAVA
LUDOSS	MALUŽINÁ
MAJER	BANSKÁ BYSTRICA
MESÍK	BANSKÁ BYSTRICA
THE TOWN CONCERN REVÚCA	REVÚCA
THE COUNTRY FORESTS	POVAŽSKÉ PODHRADIE
THE COUNTRY FORESTS	BANSKÁ BYSTRICA
THE TOWN CONCERN IN LESOV	MEDZEV
MUCHA	LIPTOVSKÁ TEPLIČKA
NEOSOLIUM	ŽIAR NAD HRONOM
THE COUNTRY FORESTS	ŽARNOVICA
THE COUNTRY FORESTS	BABINÁ
THE COUNTRY CONCERN IN LESOV	PONIKY
THE COUNTRY CONCERN IN LESOV	SLOVENSKÁ ĽUPČA
ONUFER	STAKČÍN
PAG	HUMENNÉ
PALI	HAVAJ
PIŠOJA	NITRIANSKE RUDNO
POLNOCHEM, a.s.	Bratislava
POLANA, s.r.o.	LADOMIROVÁ
PRO POPULO, s.r.o.	SPIŠSKÁ TEPLICA
PROLES, s.r.o.	ROŽŇAVA
THE SLOVAK NORTH FORESTS	ŽILINA
SIČÁR	SPIŠSKÉ HANUŠOVCE
SILACO SLOVAKIA	LIPTOVSKÝ HRÁDOK
SLOVLES	MEDZILABORCE
SPOOL	LUČENEC
THE BUILDING FOREST PRIVATE FIRM	BYSTRIČKA

THE SLOVAK CENTRAL FORESTS AND ESTATE CONCERN	KRIVÁŇ
SUCHÁREK	TEPLIČKA
SUPRATIP	STREDA NAD BODROGOM
TECHNIAMETAL	RYBANY
TISCHLER	MEDZEV
UNIFORST	SLIAČ
THE PRIVATE ASSOCIATION	UBĽA
THE ARMY FORESTS AND ESTATE IN THE SLOVAKIA	POVAŽSKÁ BYSTRICA
THE PRODICTION, MINING AND TRADE WITH WOOD	VIDOV
THE SLOVAK WEST FORESTS, THE STATE CONCERN	HORNÁ VES
THE FOREST ASSOCIATION	NIŽNÁ JABLONKA
Luboš Hano	Trenčín
ŠIRILLA	SMOLNÍK
THE STATE FORESTS	BREZNO

Source: http://firmy.centrum.sk/search/index.php?op=domain&did=200104

Conclusion

The theme of my bachelor thesis is *the market analysis of the software equipment for a processing of the projects in the forest activity*. This work is about the possibility to use a programme for making the forest projects. For a creation of these projects are used norms of the work consumption in the forest economy. At first, I try to describe the LES programme, which makes a creation of projects easy and speeds it up. Then, I have intented on a summary of forest companies in the Czech Republic. Here, I have specified how to apply a forest software in the market.

In my bachelor thesis, I have analyzed the difference how the programme is used in the Czech Republic and Slovakia. My conclusion is, that both in the Czech republic and in the Slovakia is possible to use the programme in a largely degree.

I have practised an analysis of an offer and a demand. In the Czech Republic and Slovakia, there is an offer only in one perform of the programme, next programmes, which are engaged in a analysis of the working process and make a database programme of norms of the work consumption here are not excepting the LES programme. A demand was determined by the questionnaires, where were asked concerns engaged in a forest activities. We were interested in a way how forest firms make its projects, if they have a intrance to norms of the work consumption if they have on interest to use the forest software for making projects. If we have rated questionnaires, we have determined that the most of firms have made its projects by hand, they have not sufficient entrance to norms of the work consumption and firms are interested in the programme.

In the next part of my bachelor thesis, I have compared customers´ activities before and after the supply of the forest software. After the supply the work has been more simple and creation of projects has been paster. The software works up different groups for a relevant production and consecutive check – up on perfoming works. It contains a database of norms of the work consumption, which are used in the forest economy and these norms are possible to get in the print form. And it is possible to use norms for common necessity in a working.

The last part of my bachelor thesis is about a marketing plan and its creation for a sale in the Slovakia.

Summary

The LES programme serves as an entrance of the topical databank of the national valid function norms in the forest economy. It also serves for its direct application or for making projects in conditions of concrete growth. It the basic characteristic of the programme we are going to know, which are licence and guarantee conditions, technical requests, the installation and the setting of the programme of and how to work with it.

Nowadays, there is used a programme equipment only for making a supervision of wages and production in the forest economy and for making of forest economic plans.

The norms of the work consumption serve for this purpose in the forest economy. The norms of the work consumption, in this classical conception, serve as a real example for making of calculations for each activities made by suppliers in forests, under the administration of the Czech Republic forests.

The army forests use this programme in a full degree, because they manage differently than the Czech Republic forests and stock companies.

The country forests can also use the programme in a full degree. The Czech Republic forest use the LES programme orientally in its concerns only. In the Czech Republic, there is used a tenor, which has been made according to function norms and norms of the work consumption in the forest economy till 1989.

If the firm wants sell this software, it has to differentiate types of customers occuring in the market. These types are divided into 3 groups. In the first group, there are people, who are interested in it, they need the programme and they are usually owners of larger units. The second group make people, who would like to own the programme, but the problem is a price of the programme and they are not sure, if they will be able to use the programme in a full degree. They are usually owners of smaller forest units. In the third group, there are people without bearing to computers and they condemn a work with programmes. They make their projects by hand and they do not want change a way of their work. The aim of the firm is to get a forest software on Slovak market and into companies, which are interested in forest activities in the Slovakia: The army forests, country forests, urban forests, private forests and Slovakia forests. The purpose ot the firm is an offering of the programme presentation to firms and show by this how the programme can make work easier.

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The list of supplements:

Supplements NO 1: The questionnaire

Supplements NO 2: The trade contract a providing of the using right to the LES
pogramme