Costs and benefits
of
forest management certification
for Polish State Forests
under Forest Stewardship Council scheme

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Abstract

The thesis presents results and analysis of investigation conducted in four regional directorates of Polish State Forests and twelve forest districts (three in each directorate). The survey was done in autumn 2007. The main aim of the study was to find an answer for query “What are the costs and benefits of forest certification for Polish State Forests.”

To be précised in investigation – costs of forest certification as well as certification benefits have been divided into direct and indirect. Direct costs are connected with audit carried out in forest districts annually or every 5 years. Into indirect certification costs were included: social costs (e.g. connected with forest workers safety), extra bureaucracy work, amendments in forest management and nature costs (as dead wood left in forests, set aside areas or trees retained in forest after cuttings). Direct benefits: price premium and additional sale. Indirect benefits were divided into monetary and non-monetary.

The annual direct costs per hectare range from 0.019 EUR in Białystok Regional Directorate to 0.043 EUR in Łódź Regional Directorate. Costs per hectare decrease together with increase in the considered area.

Indirect Forest Certification (FC) costs connected with e.g. set aside areas or forest management improvements and other activities were nowhere to find. Roughly estimated, the highest obtained indirect costs (nature costs) are equal to almost 400 000 EUR. Such assessment was possible to make in Poznań RD case, where certificate was suspended because of too small extent of set aside areas (2% instead of required 5%). The estimated social and bureaucracy costs (average for regional directorate) amounted to around 90 000 EUR per year.

The survey did not find additional sales of timber or price premium because of possessed certificate of good forest management.

Among the indirect benefits indicated by respondents’ participation in internationally recognized organization – Forest Stewardship Council (FSC) was brought up. Furthermore, certification highlighted some weak points in organizational and environmental structure. As an indirect benefit, forest workers’ safety was also classified as being regularly revised and at the same – possibly has an influence on improvement in that matter. Certificate has an effect on avoidance of sale revenue loss. Other indirect benefits were not noticed by respondents.

During the survey, beside questions about FC costs and benefits, inquiries about attitude to the issue and fulfilment of the expectations were made. Generally, opinions about forest management certification are different in different foresters’ groups. Many of them assess costs as too high, and certification generally – as useless.

Presented research gives general picture of FC position in Polish State Forests. Information about direct costs is reliable. Nonetheless, for more precise estimate indirect costs and benefits, much more detailed investigation needs to be carried out.

Key words: *forest management certification, direct and indirect certification costs, direct and indirect certification benefits, Polish State Forests, FSC.*

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1 Introduction

In time of political transformation which took place in Poland in early nineties, the organization like State Forests National Forest Holding urgently needed a confirmation of proper forest management leaded in State Treasury forests. Most forest areas were (and still are) under strictly defined and centrally verified management *(Paschalis-Jakubowicz, P. 2006).* And this fact arose some doubts among society and lack of trust to such organization. Also democratization of decision making in State Forests was necessary to introduce *(Paschalis-Jakubowicz, P. 2006).* Forest certification, as a sort of external, independent audit of forest management seemed to be the best way to give a proof that all the operations inside the enterprise are properly done and do not make any harm to society or the state. Forest certification and Chain of Custody (C-of-C) of wood were introduced to Polish forestry by decision of the General Director of State Forests in 1995. Regional directorate was chosen as a unit to be assessed.

In spite of (a) few exceptions, almost each Regional Directorate has obtained a FSC certificate of forest management.

However, certification's implementation has not finished all the controversial issues in the Polish forestry. Certification costs and benefits, labelling, transparency of rules and their attitude to domestic legislations, hurt professional pride of foresters suddenly criticized and forced to test their skills and practical knowledge *(Paschalis-Jakubowicz, P. 2006)* made it unfavourable in some pools of people. Among opponents of forest certification arose opinion that certification was introduced to improve Polish foresters' and forestry image among society or was a tool against privatization of State Forests. Such controversial statement, not famous in Poland, is often quoted by foreign authors *(e.g. Klingberg, T. 2002).*

Particularly certification costs arose a heated dispute in foresters' environment. Great majority assessed the costs as too high. However, not many studies have been conducted to check expenditures connected with certification audits. Such publications are strongly needed, however.

1.1 Objectives of the study

Forest certification since its emergence on Polish arena became a hot topic among foresters. The most controversial are audit costs. According to foresters they are too high. Some of them count that to cover certification expenditures in one regional directorate, cutting of 1250 m3 of timber what is equal to 6 ha clear-cut is necessary. Others multiply this amount by 17 (number of Regional Directorates in Polish State Forests) and obtain that 20 ha of Polish forests have to be cut each year to pay for certificates *(Ostrowska, G. 2001).* Hence, following study aims to assess costs and benefits associated with forest management certification at the level of forest management unit – Regional Directorate of Polish State Forests.

Forest certification requirements could also lead to some changes and improvements in forest management in order to meet all demands of Forest Stewardship Council. Then, next investigation inquiry was formulated: what costs besides those directly connected with audit could be generated in State Forests? Whether any changes in management have been implemented into forests?

Among costs very controversial seemed to be also nature costs caused by exclusion of some areas from the traditional management and the most profitable which is timber harvesting. The study aims at finding data which could allow to express monetary losses due to set aside areas or because of trees which are classified to be left in forest to obtain dead wood in the near future.

Very desirable was to find if certification brings any significant economical profits such as price premium or additional timber sale. Whether certification has any environmental impact and if nature and (at the same) society receive any benefits from this.

Seems very likely that forest certification in Poland does not bring any profits in monetary terms. But if forest management certification yields any benefits, how probable is that benefits from certification compensate its costs? – such investigation question was posed to answer during investigation.

1.2 Background factors

1.2.1 Polish Forests Area

Forests cover in Poland has undergone substantial changes. Since forest was present at almost a whole area of the country in the Middle Ages, it shrank to 40%

forest cover at the end of the 18th century, and just 20.8% by 1945. All those alteration where caused by agricultural expansion, demand for timber and changes of borders of the state.

Nowadays, the total forest area in Poland reaches 9.00 million hectares (at 31.12.2005) *(The State Forests Information Centre, 2006).* This is equivalent to 28.8% of the country's area. According to international standards, which take into account also the lands associated with forest management the area of Poland's forests is 9,192,000 hectares *(The State Forests Information Center, 2006)*.

The only European countries with higher forest cover are: Sweden, Finland, France, Germany and Ukraine.

1.2.2 Ownership and Tenure

Regarding to the ownership and tenure structure, Polish forests are mainly publicly owned – 82.3%. The forests under State Forests National Forest Holding (NFH) management consists 72.2% of the total *(The State Forests Information Center, 2006)*. This forest ownership structure remained unchanged since the post-War period. However, year 2005 showed a significant increase in forest area in private hands by 2% as compared with 2004. At the same time forest administrated by the State Forests NFH has decreased.

1.2.3 Legislation

The main tool of Polish forest legislation is an Act on Forests (1991) and the Forest Policy of Poland (1997). In 1997 the Act on Forest was changed. The paragraph about management intensification was replaced by declaration of protection and durability of forest resources. That turned forest policy to go into the concept of sustainable development of forest cover.

The most important goal formulated in the Act on Forests aside from productive function was preservation of the resource for the future generations and protection of forests. The sustainable management is consistent with building mixed, multi-species, ecologically stable stands, which fulfil social, ecological and timber production functions.

1.2.4 Organization of the State Forests National Forest Holding

The State Forests National Forest Holding is headed by the Director General of the State Forests NFH. There are distinguished 17 Regional Directorates of the State Forests. Forest Districts constitute the basic State Forests NFH organizational units, headed by Forest Inspectors. The number of Regional Forest Directorates is 17, and Forest Districts – 428. The Forest Sub districts amount to 5580.

There are geographical differences in the proportion of forests owned by private persons. The greatest exists in Małopolskie Voivodship Province – 187,500 ha, Mazowieckie Province - 332,900 ha and Lubelskie Province – 220,700 ha. The lower share of private forest is noted in Provinces: Lubuskie – 8,200 ha, Zachodniopomorskie – 11,00 ha and Dolnośląskie – 14,000 ha. (the share of private ownership should be better)

There has been a notable rise in the share of total forest area protected within National Parks – from 1% in 1985 up to 2.0% in 2005 *(The State Forests Information Centre, 2006).*

1.2.5 Resources of the State Forests

The species' structure reflects in the great extent distribution of habitats. Coniferous species are predominant and cover nearly 75.6% of total forest area. The prevalent is Scotch pine which counted together with Larch occupy 67.40% of total forest area.

In the period 1945-2005 the species' structure of Polish forest has undergone some changes what resulted in increase of broadleaved species from 13.0% up to 23.5%.

Regarding to age structure of the stands prevails class III – 41-60 years (23.9%), the second place takes up class IV – 61-80 years (19.2%) and third belongs to class II – 21-40 years (17.5%). More than 70% of timber resources is pine.

Growth of the stand volume is one of the indicators of forest management quality. Timber resources estimated by Forest Management and Geodesy Bureau and State Forests NFH amounted to 1,586.000 m^3 of gross merchantable timber.

The harvesting level attains the amount around 50% of annual volume increment growth of the standing timber resources.

The volume of harvested timber oscillated around 30 millions m^3 per year. Quoted figure includes wood obtained from private forests and national parks. The State Forests NFH harvest annually ca 28,164,000 m^3.

Nowadays, 19,9% of merchantable timber were harvested under the clear-cut system. An area of clear-cuts in Polish forests is 25,000 hectares and is the lowest over the last 20 years. This is the result of turning the forest management into semi-natural forest model, a process which continuously takes place in Polish forests.

The quantity of timber harvested per hectare in the State Forests NFH is rather stable, 3.88 m^3/ha in 2003, 4.08 m^3/ha in 2004 and 4.00 m^3/ha in 2005 *(The State Forests Information Centre, 2006)*.

1.2.6 Primary processing and Market

Polish forestry and forest industry play an important role in the state's development. Hence, their proper and efficient cooperation should lay in the country's interest and be moderated by it if needed.

Forestry plays some role in the state's economy, but does not have a significant influence on it. However, associated with forestry sale of timber, pulp mills and furniture industry, export of those products has some impact on Gross Domestic Product. Therefore, maintenance of all trade links is very important for Polish State Forests, as the main and most significant forest manager in Poland.

Anyway, the meaning of forests does not limit only to economic side. The forests consist plenty of irreplaceable values such as influence on climate, soil and water protection... And the forest phenomenon is not inherent only in economic power.

In recent years the State Forest Holding holds the dominant position in a term of wood production and supply. Timber demand is created mostly by private companies from the wood, furniture, pulp and paper sectors (around 60,000 companies). Almost 99% of them are private and employ less than 9 people.

Polish forestry is characterized by high amount of the timber which is classified to be left in a forest and become dead wood. The dead wood would constitutes a key element of forest ecosystem. Those raw materials make a significant contribution to the highest quality assortments of wood such as: veneer, plywood, resonant- and construction wood is noticed.

The timber industry in Poland uses 27-29 million m^3 of wood per year. 46 % of wood is used in production of sawn wood, 27% in production of wood-based panels and 20% in pulp and paper manufacturing.

The most valuable Polish timber (in form of veneer, ply sheets or high grade sawn wood) is exported to European Union countries, mainly to Germany and Sweden. The main importers of Polish raw and debarked wood are Austria, Czech Republic, and Germany; sawn wood of a lower quality class goes to Germany, Italy, Spain and the Netherlands. Raw wood and debarked wood goes to the Eastern European countries.

Poland's imports of raw wood and barked wood are highest from the Eastern European countries, while veneer and ply sheet imports are highest from the EU countries. Imports of raw barked and debarked wood come from Lithuania, Slovakia and Ukraine, while sawn wood comes from Ukraine, Germany and Russia. Veneer and ply sheets are imported from Germany, Finland and Sweden, other wood profiles from Sweden, Germany and Estonia.

Poland exports up to 201 000 m3 of round wood (in 2005 r. – 411 000 m3) *(The State Forests Information Centre, 2006)*.

A significant influence on Polish wood market has export, especially export of furniture.

In spite of its furniture industry, Poland is also a significant producer of floor materials, packaging, pallets, doors and windows. Most of Poland's wood products are exported to EU markets, mostly to Germany and Great Britain.

The wood industry, furniture, pulp and paper sector contribute ca 2% of the national GDP; the forest sector – 0,2%. 275,000 people are employed in the Polish wood sector and about 60,000 people in the forestry sector. The value of exported wood products is ca 5.5 billion USD and it constitutes 14% of Poland's export.

1.3 Emergence of forest certification in Poland

At the end of 1989 Poland found itself in transition process from centrally-planned to market economy. It was a very profound social and economic structural change not only in Poland but also in other European states.

It is worthwhile considering that the process had a direct influence on forest sector in those countries. Significant variables that had an impact on forestry may include:

changes in forest ownership through privatization or restitution, the privatization of forest industries etc, etc…

Many factors led to the situation where Polish forestry became conceived by society and some environmental organizations as a part of the country which should be controlled more by society. Furthermore, practiced arrangements must be under scrutiny and verification of independent organizations. All of that because organizational structure and management of forestry looked hermetic and centrally steered *(Oktaba and Paschalis-Jakubowicz, 2005).*

The increasing pressure of environmental and non-governmental organizations which demanded more strict rules of protection and sustainable management led to serious conflicts not only on local arena. Many critical publications revealed devalued rationality of forest management and scientific basis of Polish forestry.

Polish forestry faced some more difficulties like increasing accumulation of industrial pollution which affects forest and causes its defoliation and dieback.

At that time Polish State Forests were noticed as a monopolist. Only 1,4 million of small private forest owners with average forest area equalled 1,3 hectare existed.
That was difficult to accept by some politicians and groups of society, whereas neighbouring countries already carried out the privatization and reprivatisation operations of the forests owned by state.

A free market required some transformation in the forest industry. This branch of forest sector left without any native capital what caused many bankruptcies and financial collapses.

Also professional pride of Polish foresters felt hurt. For many years they have been conscious of their high qualifications and efficient forest management, which fulfilled all sustainable forest management requirements or, e.g. Helsinki Criteria. They became criticized and deprived of society's respect.

All of the quoted above factors influenced the decision made by contemporary Ministry of Nature Resources Protection and Forestry with General Directorate of State Forests that certification of forest management in State Forests should take place. One restriction was placed in the agreement – the assessment has to be conducted by independent units with proper experience.

The assertion that if audit according to FSC standards brings positive result and Qualifor certificate will be given definitively induced the General Directorate's decision that certification process will be carried out in Polish States Forests *(Oktaba and Paschalis-Jakubowicz, 2005)*.

It is still uncertain if certification in Polish State Forests was an order that came from General Directorate. The most frequently quoted example against this opinion and which could prove such statements is Krosno Regional Directorate. This Directorate has never possessed a FSC certificate. This case was described more detailed in next part of the thesis (look: *Problems with FSC certificates in Poland*).

In Polish written sources is not mentioned that certification of Polish State Forests was used as a tool against privatization. However, such opinion is indicated by foreign authors, e.g. Klingberg *(Klingberg, T.,2002).* According to him Poland has been highly committed to forest certification and the major factor that motivated it to endorse FSC scheme certification so heavily was defending state management against possible privatization. This strategy was also reinforced by the expressed need to access European Market.

Polish government has a significant contribution in requesting FSC certification of The State Forests' lands *(Cashore, B. et al, 2006).*

1.3.1 Initial support

In 1995 a specific offer appeared from foreign companies which had been buying wood materials from Polish State Forests. They tendered to pay for certification of Polish forests. According to them timber raw materials must have a certificate. Such opinion comes from both large, international companies (e.g. IKEA) and small planks exporters. *(Paschalis-Jakubowicz, P. and Oktaba, J., 2005).* A group of British wood product traders submitted an offer to certify firms which operate in Poland's forests *(Jodłowski, K. 1999).* Certificate could ensure buyers that exported products are made of wood coming from well managed forests and ease access to it. On the other hand, the producers will benefit from opening on European market and become more competitive comparing to those who do not have a certificate *(Paschalis-Jakubowicz, P. 2006)*.

If taking into consideration producers for domestic market and their contribution towards certification emergence in Poland, seems quite possible that there were no significant or even lack of any influence from their side.

Then, the market has generated need amongst forest owners and wood processor of applying for a certificate. Poland with its state forests became the first European country subjected to forest certification.

Because of law, as well as economic and natural conditions, a regional directorate became recognized as a unit which would come under the audit.

The basis for the whole process was determined by Principles and Criteria for Natural Forest Management. Standards developed and fully described by FSC, consisted 10 Principles and 52 Criteria.

1.3.2 Present status of Forest Certification

Within ten years of certification development two main certification systems have been created: Forest Stewardship Council (FSC) certification and the Programme for the Endorsement of Forest Certification schemes (PEFC). Also a number of national certification schemes have been developed (e.g., Sustainable Forest Initiative, Malaysia Criteria & Indicators (MC&I), Lembaga Ekolabel Indonesia (LEI) etc.).

In total around 230 million hectares of forest have been certified (Fig.1). The total forest area certified to FSC standards is 67,159,644 hectares (FSC, 2005) *(http://www.forestandtradeasia.org/files/FAO%20-%20IUFRO-certification%20in%20dev%20countries.doc [2007-12-08]).*

The vast majority of certified forests are in the temperate and boreal regions of North America and Europe, which together account for 92.5 percent of the total certified forest area (Fig. 1). Developing countries account for just 7.3 percent of certified forests while tropical forests, the original focus of certification, harbour just 5.2 percent of the total and most of these forests are plantations rather than natural forests. Tropical developing countries with the largest areas of certified forests include Brazil, Bolivia, Mexico and Guatemala. The great majority of certified forest areas are industrial forests *(http://www.forestandtradeasia.org/files/FAO%20-%20IUFRO-certification%20in%20dev%20countries.doc [2007-12-08]).*

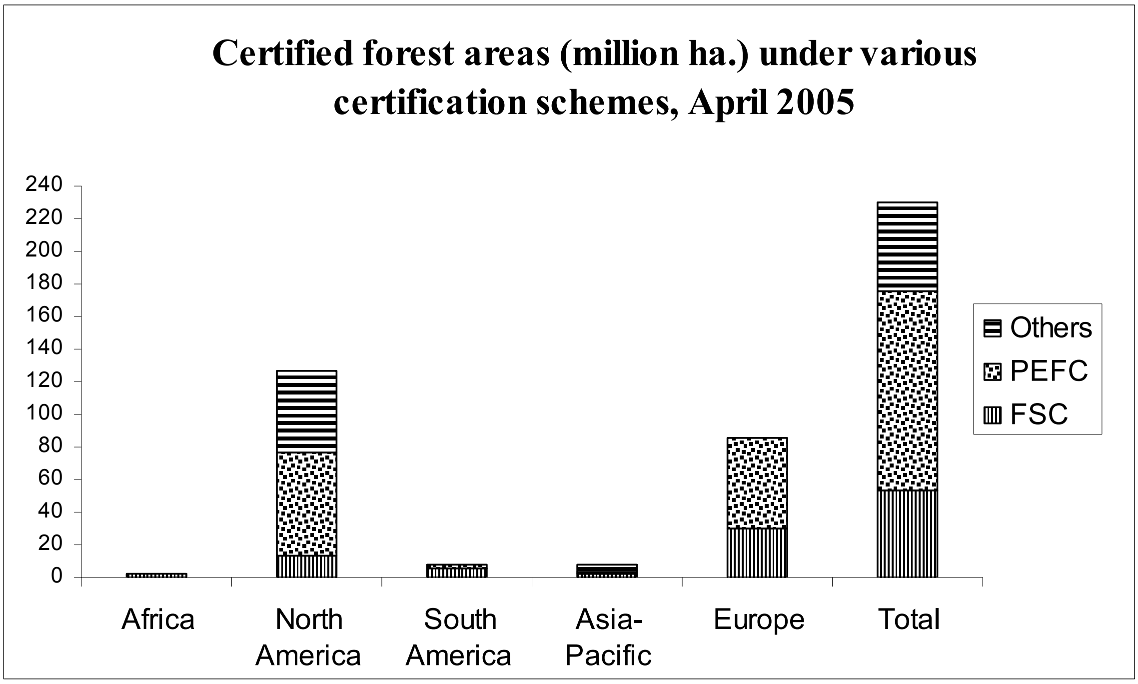

Figure 1: Certified forest area in 2005

***Source** :http://www.forestandtradeasia.org/files/FAO%20-%20IUFRO-certification%20in%20dev%20countries.doc [2007-12-08]*

Market demand for certified forest products continues to be mainly identified in Western Europe. Within Europe strongest demand for such products seems to be in the United Kingdom. Germany is increasingly reported as a growing market, followed by the Netherlands. The majority of certified products find their final destination there, followed by the United States and others, including Japan. No, or at best low, interest in the final consumption of certified products seems to prevail in the southern parts of Europe, in most Eastern European countries and Russia *(UNECE/FAO, 2001-2002).*

At present, on Polish arena only three Regional Directorates do not posses valid FSC certificate (Białystok, where the certificate was suspended since 13th of August 2007; Toruń where certificate expired on the 31st of July 2007, and Krosno, which has never had the certificate) *(http://www.fsc.pl/polska/?rdlpspec=7 [2007-12-08]).*
There were involved in process two certifying companies: SGS Poland (with headquarters in Gdynia) and NepCon /Smart Wood (Cracow).

Since 2003 every effort has been made to establish also Polish national structures of PEFC. The initiator of the process was Polish State Forests. It was established within the Association of Foresters and Wood Technologists (SITLiD).

Poland became a member of PEFC in October 2003. *(Zabrocka-Kostrubiec and Siewko, 2005).*

The first FSC certificate of forest management in Poland obtained Regional Directorate in Cracow (6^{th} January 1998), then in Wrocław (16^{th} October 1998) and in Szczecin (22^{nd} March 1999). Those three units had been assessed by SGS Poland and received the certificates for 10 years. Starting with Regional Directorate in Białystok the certificate was given for a period of 5 years *(Frankowski and Niemiec, 2005).*
The highest number of certificates was awarded in 2003; for 6 regional directorates.

During the audit all the documents, directives and rules of forest management are reviewed. The detailed review was carried out in compliance with the rules in randomly chosen forest districts.
All the principles, according to which forest management in Polish forests is led, fully met all the FSC requirements. The confirmation of that was written in reports produced after the certification audit. Furthermore, many of specific directives for individual forest operations exceeded the level of requirements set by FSC.

Some estimations show that around 80% of lumber in Poland is FSC certified, particularly timber for further processing, mainly into pulp and paper, furniture, and all special grades' timber for processing into veneer and plywood. *(Paschalis-Jakubowicz, P., 2006)*
All the strategic timber customers of State Forests, such as Castorama, IKEA, Leroy Merlin, OBI, British Premium, etc., demand certificates as a pre-condition for contracts *(Paschalis-Jakubowicz, P., 2006)* .

In a year 2000 only one Polish company ("HAMAR") had a chain of custody certificate; in 2001 three companies, in 2002 five companies, in 2003 ten and in 2004 twelve Polish companies have been an owner of FSC certificate *(Frankowski and Niemiec, 2005).* Nowadays, Poland became a leader in a number of companies with chain of custody certificate – 131 companies possess such document.
(http://www.nepcon.net/index.php?id=1696 [2007-12-08])

In such a way Poland became the first European country where forests owned by state were subjected to FSC certification. The certification of Polish forests owned by State initiated socialization of the decision-making process in forestry. It is thought to be one of the most important trends in the future development of multifunctional forestry *(Paschalis, 2006).*

1.3.3 Problems with FSC certificates in Poland

The first cycle of forest certification was completed at the beginning of 2004. Almost all of the Regional Directorates of the State Forests have gained the Forest Stewardship Council Certificate.

There exists one exception in Regional Directorate from southern Poland. The main reason of the situation lies in significant differences in observations included in the audit report. The Regional Directorate staff displayed some contradictions between instructions and recommendations submitted by certifying body included in audit report and FSC Principles and Criteria as well as in Polish Act on Forest.
In addition, the Directorate indicates some lack of neutrality during the conduct of the audit. While audit was under the way became clear that some family connections in audit team and the family members' pretensions claimed on State Forests influenced the matter of commands and instructions given in the final report. In response Regional Directorate refused to sign the agreement of forest management certificate prepared according to SmartWood's standards. It is worth to add that the signature was the last step to obtain the certificate of forest management for five years' period, which was already approved by SmartWood. Shortage of good will of certifying body to clarify all the discrepancies among both sides' evaluation led to situation when the certificate was not granted *(Sawicki, 2004).*

In spite of described above fact, that the Directorate does not have any proof that the forest management is led well, there is no negative influence on dimension and direction of timber selling. There is observable tide on the wood market and the pressure from wood buyers who put in a claim for increase in the harvesting level and the amount of raw material. In such situation, the certificate could have more prestigious meaning than practical use *(Sawicki, 2004).*

Many Regional Directorates have extended validity of the certificates for next five years. In other Directorates preparation for signing new contracts are on the way. Nowadays, in spite of "exceptional" southern Regional Directorate which remains without certificate, two more Directorates stay without valid one. In one of them from central Poland (Toruń) the certificate expired at the end of July 2007.

The Regional Directorate in north-east Poland (Białystok) has a suspended certificate since the middle of August present year when the control audit had been finished. The FSC Poland informs about the suspended certificate on the WebPages but neither official information nor control report comes to the Białystok Directorate. All the companies cooperating with Regional Directorate in Białystok have been informed by auditors about suspended certificate and those companies, not SGS Poland, delivered the message to the Directorate. Yet the report is not official, it is impossible to appeal from the SGS decision *(Sobociński, 2007).* In described conflict many controversies exist and not quite clear situations.

The cases where the certificates have been adjourned have occurred a few times in certification history in Poland. The latest one arose also in Poznań Regional Directorate. The objections regarded:

- impropriety in establishing rare and protected ecosystems;
- lack of sufficient procedures leading to maintenance of dead wood in the forest (lack of dead wood stocktaking, shortage of procedures leading to protection of dead wood in a forest);
- improper forest workers' safety equipment (lack of equipment or lack of caution in its use);
- shortage of appropriate equipment of machines working in the forests (e.g. lack of oil absorbents);
- not correct dealing with hollow trees, old trees, nest trees (not sufficient knowledge among foresters and forest workers how to deal with such elements of forest ecosystem; lack of maps with marked valuable elements);
- lack of proper setting of aside areas (lack of consultations with NGOs and scientific units, not sufficient amount of set aside areas) *(Sobociński, 2007).*

The Directorate obtained one year to improve the management. But prompt and considerable effort has been put in to improve the management and correct all the objections. They increased the set aside area size from 2% to 5,7% of total Directorate area. Still, auditors, during summer assessment proved that almost half of aside areas constitute peat bogs, grasslands and pastures. That did not allow bringing back the certificate. However, one month later a new list of aside areas in amount of 20 949 ha was presented. This step made possible to re-establish the certificate for the Directorate.

The problem with safety equipment of forest workers and machinery also has been solved. At the beginning it was not clear if foresters have permission to control the

forest workers' outfit and working machinery equipment since all forest workers are hired by forest districts. All forest workmen belong to external contractors since transformation in The State Forests after the 1989.
According to audit team members revision of workers' equipment could be possible by a special annex in the agreement between forest district and forest service team. Then, instructions by Regional Director were given to inspect the workers by district at least once in three months with well recorded documentation of the fact.
All those together contributed to the re-establishment of the FSC forest management certificate.

1.4 Review of earlier studies on cost and benefits of forest certification

There are not many existing studies regarding costs and benefits of forest certification. The explanation for that uncertainty could be lack of appropriate methods to measure and assess those two elements/factors strongly connected with the certification course.

So far in Polish conditions only Regional Directorate in Zielona Góra has made a small investigation concerning the impact the forest management certificate elicits, in years 2000 -2004.
The costs of certification expenditures in first year, for main audit, came to 0.3% of income from timber sale and 3.75% of income from exported round wood. The costs of annual control audits in the following three years amounted to 0,1% of sale income on domestic market and 0.06 – 0.07% of export selling.
After the Directorate gained the certificate, a sudden increase of sale to companies which already possess the chain of custody certificate from 2% in 2000 year to 36% in a year 2001 has been noticed, and in a year 2004 the increase reached the level of 51% of total amount of sold timber. The certificate contributes also to the expansion of export, from 0.68% of total amount of sold timber in 2000 year, 1.95% in 2001 – the year when certificate has been given, to 11.22% in 2003 year *(Frankowski and Niemiec, 2005).*
To conclude, expenses connected with certification process, on average 0.04% of total annual income, reach the target - significant increase in number of companies which own the certificate and were interested in buying raw material coming from sustainably managed forest. An export sale also has been expanded especially in the period of

recession on domestic market. And finally, possessed certificate allowed the owner to become more attractive on foreign market.

Presented above investigation regards only direct costs of certification process. Indirect costs due to compliance with the certification standard were not mentioned there.

Simula, M., et al. in their *"Report on financial costs-benefit analysis of forest certification and implementation of phased approaches" (2004)* present results of their case study regarded forest certification costs in Indonesia, Malaysia and Brazil. Presented below numbers are take from their case study.

The external direct costs of forest certification have been presented by Baharuddin & Simula (1994). They report that direct costs vary from USD 0.30 to 0.60 per ha in developed countries in large forest management units. The auditing costs were assumed to be higher in developing countries. Studies from Indonesia conducted in 1998 reported to charge USD 15,000 to 30,000 per audit.

In regards to developing countries, Bass et al. (2001) reported direct unit cost of USD 0.02/ha in Zambia (Muzama Crafts Ltd.) to USD 0.90/ha in Bolivia (Lomerio). The compliance costs in this case were USD 340,000 which were practically entirely covered by donor support (Thornber 2000).

The picture appears quite similar in tropics. A cost-benefit assessment has been carried out in Madagascar by Ramamonjisoa & Rakotomanjaka (2003). The study concludes that in current conditions in Madagascar, certification is not economically feasible because of high costs of management procedures' formalization.

The same studies indicate that the main direct costs of forest management certification are the payments to the certification body. Relatively higher are costs for tropical forests than temperate forests, partly because many certifiers are located in temperate countries and partly because tropical forests are complex both ecologically and socially. The costs are also higher for small units than for large ones.

Six forest areas from Central America have been analyzed by De Camino & Alfaro (1998). Their research found that the costs of audit in the first year per area unit increase with the decreasing size of forest management unit. In a certified area equal to 36,000 ha the cost was USD 0.45/ha while in the area of 750 ha the respective costs amounted to USD 10.66/ha. The similar relation was also in annual control audit costs.

As quoted above, only a few studies were conducted to establish the potential costs of certification. One of the investigations has been performed by Malmi (2000) in Finland. He concluded that the first year costs were around EUR 11.31 per ha, of which compliance would be EUR 11.14/ha. These costs correspond to losses due to setting aside areas and leaving retention trees on the logging site. The auditing costs (together with surveillance costs) were EUR 0.04/ha and internal management system costs were EUR 0.13/ha.

Results of study carried out in Sabah, Malaysia show that forest management certification achieves a market premium for certified logs. Especially high quality hardwoods (e.g. Selangan Batu, Keruing) destined for the export market achieved a price premium of 27% to 56%. Lower quality timber (e.g. Kapur, Seraya) obtained a price premium, however the difference is less pronounced (2% to 30%) *(Kollert and Lagan, 2007).*

In most cases it is difficult to talk about possible benefits which certification could brings. There are still no accurate methods to measure them.

The main economic benefit of certification is perceived price premium and market access. But this advantage has rather short term run as/if the supply of certified products increase. Nevertheless, this is a main driver for some pioneers of certification, especially in the tropics (Eba'a & Simula 2002). However, in case of tropical timber for which demand is still very high and even exceeds supply in some export markets; some suppliers report price premium ranging from 5% to 65% in tropical sawn wood and plywood.

Also access to new markets, especially in Great Britain, Germany, the Nederland's and the United States has been eased or was protected thanks to the obtained certificate.

Nevertheless, premium is likely to disappear with increasing supply. And in the case when certification became a basic requirement for timber suppliers in some markets and market segments – buyers may not be willing to pay any extra for certification in spite of the fact that certification adds value to the product and gives evidence of the environmental quality of the product.

Bass et al. (2001) found that enterprises are often unable to meet expected market benefits because of barriers in export channels. Therefore, benefits which they are able to find are indirect such as improvements in administration and management. Molnar (2003) also reached the same conclusion.

Concerning other indirect benefits which have been found during the studies include better professional image, improved workers' safety and training, better records, more active public involvement, etc.

Regarding environmental benefits, these are also difficult to classify and quantify, particularly if measured in economic terms.

Even so, Rametsteiner (2000) found that certification can lead to the establishment of significant protected set aside reserves within certified forests.

Continuous discussions among scientists are led to answer the question what extent to increase biodiversity or survival of threatened species in ecosystem. The bottleneck is still shortage of reliable techniques for assessing those aspects of certification.

After all is clear that certification has some influence on forest managers' perception of their forest areas.

Social impacts are also difficult to quantify. Some of the social benefits can be measured in economic terms. For example, improved occupational health and safety generally leads to reduction in accidents and thereby lower costs for the employer. Better social standards induced by forest certification lead to enhanced safety conditions, hence increased productivity.

Quantitative assessment of such benefits has, however, been rarely done.

Often, in many regions, certification has highlighted the problems of land rights (Ozinga 2004) and certified operations have usually solved their own social and rights conflicts through local measures.

Mentioned above examples from diverse regions show that impact of certification process in terms of its costs is significant but the precise estimation of them is problematic for a number of reasons. Especially those compliance costs have been proved as problematic because of lack of recorded data. The same problems were found in valuing the benefits of certification.

The costs mostly depend on the existing management standards and the state's legal regulations.

In general, certification costs seem to be much heavier for primary producers than processors. On the other hand, the benefits of certification (mainly market access) tend to be met by actors down in the supply chain. Therefore, it is possible to say, that the winners from forest certification appear to be far from the forest, especially in the case of tropical forests.

2 Methodology

In order to determine forest owner's attitudes toward certification and to see what are the costs of FC; if possessed certificates provide any benefits; whether certification have influenced the market situation and timber buyers' number a survey was conducted.

The project involved surveys of Regional Directorates of Polish State Forests and Forest Districts. The objectives of the Polish State Forest units' survey were to collect representative data on general attitude to forest certification process and expenses connected with auditing, as well as with changes in forest management. Investigation if owned certificate brings any benefits also was made.

The survey contains of four parts. The first one concerns objectives and expectations of enterprise regarding forest certification *(Annex 1).*

General attitude was studied with eight arguments covering the economic and ecological aspects of the certification. In the assessment Likert's scale from 1 to 4 was used.

To answer the question what were the reasons to take by Holding the decision of being certified was placed as a text open-ended question (just not to indicate any possible answer to the respondent and to elicit a whole range of possible replies of varying length and articulation).

In this part was also enclosed an enquiry about advertising of possessed certificate. The aim of that was to check if the unit pays any attention to it and how big interest it develops. The scale from 1 to 4 was applied here as well, whereas 1 means "not at all" and 4 – "a lot".

The second part of the survey regards costs that enterprise incurs to bring up the existing level of forest management to FSC standards.

The costs have been classified as direct and indirect (Figure 2).

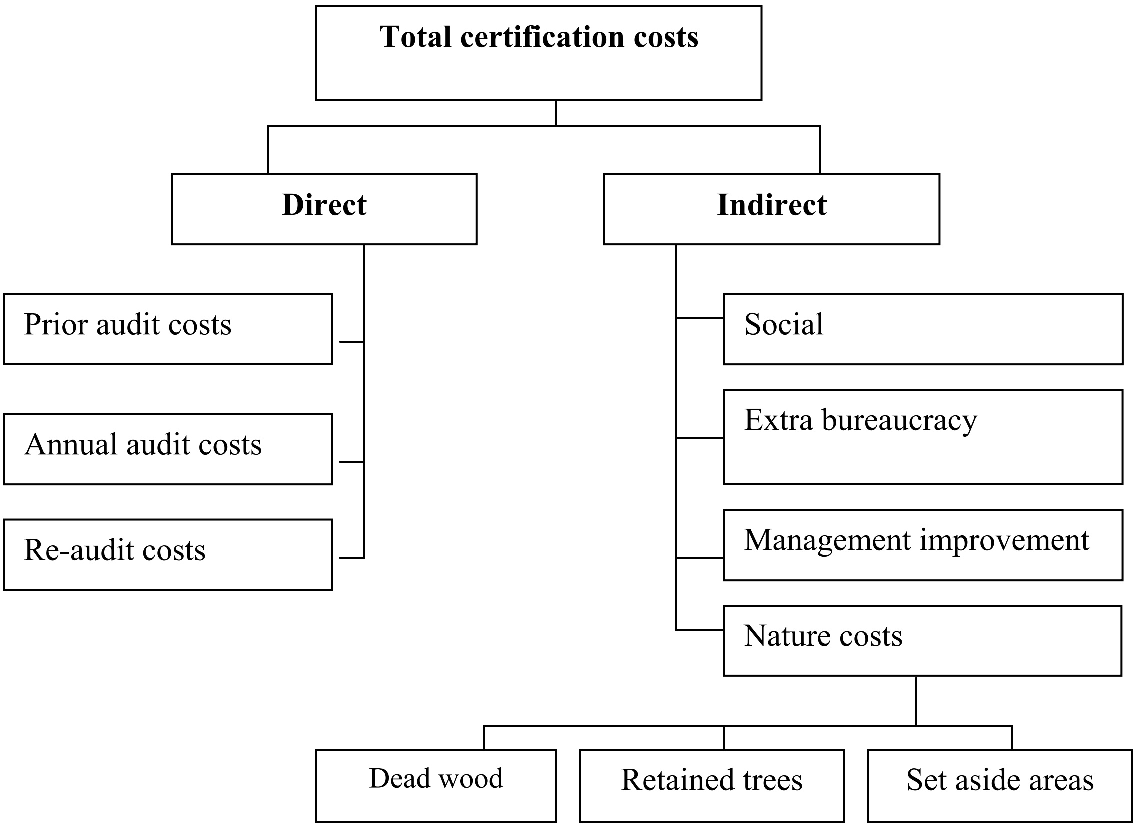

Figure 2: Classification of costs associated with forest certification

The direct costs were connected with audit process. The audit of forest management has been divided into seven parts. Each part was relevant to expenses borne in every year. There was used a table with pre-assessment cost, main assessment cost, three parts of annual assessment and a column with re-assessment cost. Respondents were asked to give the information about the costs in Polish currency which was later conversed into Euro.

To obtain the relevant information about the indirect costs of forest management certification a table with all arrangements which are required by FSC standards had to be used. The basic question at the beginning was if this special arrangement is applied because of the certification reason or was used before certification, because of other law, like any forestry acts or other special decrees.

Another information desired to obtain was if there are any special units – a person or a group of people, who are responsible for proper application of the operation. In the case of outsourcing company which takes care of the application arrangements – arises the question to specify any extra costs connected to that fact. If the special operation is managed by internal unit then what extent of an extra time is necessary to deal with it and what the sum of average salary for the worker who takes care of the arrangements is.

In the table could not be omitted the monetary losses due to forest certification environmental requirements like e.g. set aside areas which have to be excluded from usual forest management or retaining trees which would not bring any monetary benefit after selling them.

The audit procedures like field trips of auditors, their special meetings, seminars etc. influence also incur so the column with the question to specify such expenditures also was included.

In the third part of the survey questions about potential benefits which owned certificate brings to the company were placed (Figure 3).

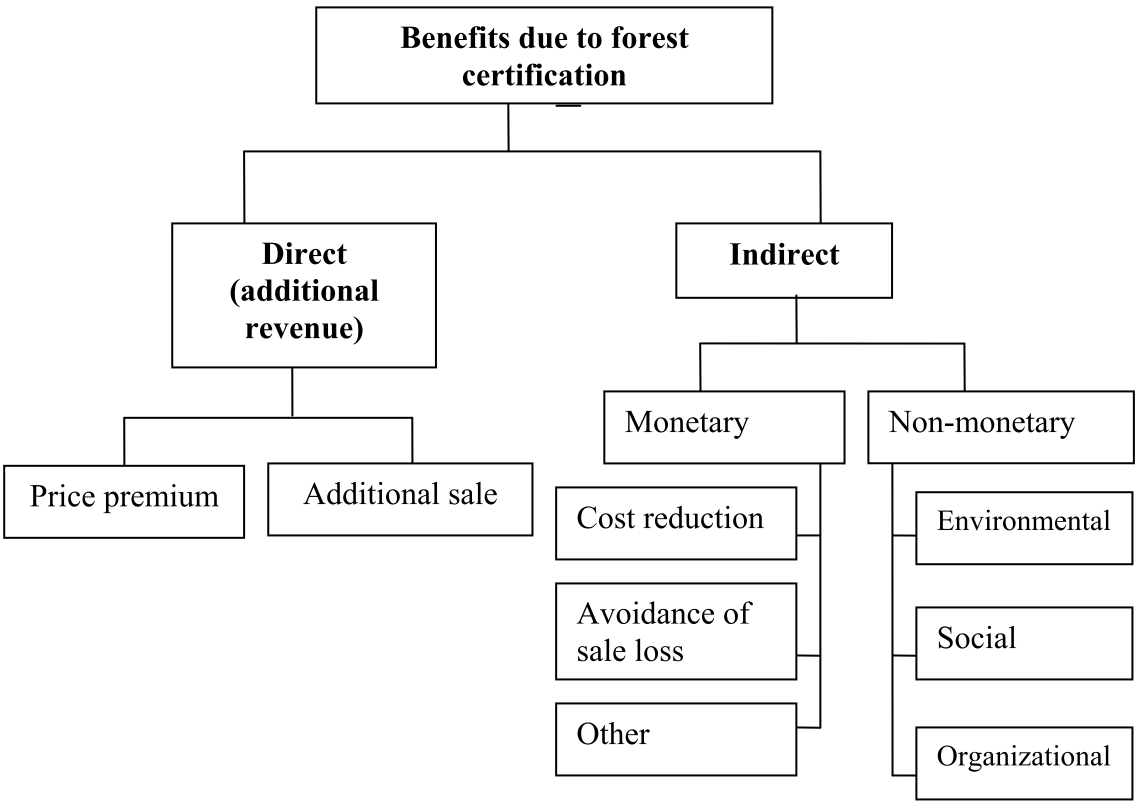

Figure 3: Classification of benefits associated with forest certification

In the question was used a table with possible benefits. Each quoted benefit had a separate numeric code from 1 to 4 (Likert's scale) – to evaluate level of agreement. 1 in this scale was equal to "no outcome" and 4 to "very significant outcome".

This part contains different types of questions like *yes no* questions, open text queries and asks to provide numeric figures.

There were included asks to provide the following information:

- if FC helps to increase the number of domestic and foreign buyers,
- if the clients show any special interest in certified timber,
- how big is the additional sales volume because of certificate, and if so
- if there is any price premium for products originating from the forest managed in a sustainable way?

In the last part of the questionnaire there were some questions about personal data which could help to identify the unit and observe how big importance the forest certification could have for them. Among other inquiries was a question to provide information about annual timber sale and share of export.

The survey was tested with three units, of the same kind which afterwards were included in the main study. During those visits the questions' formulations were refined. But only small changes were implemented. The results from pre-test were not combined with the results of post-test interview.

The composition of the survey questions had a big influence on the fact that the questionnaire had to be conducted as a face to face meeting with a respondent. The questions were asked orally. That also created a possibility to include a detailed conversation text, written down next to each question.

The survey was carried out in fall 2007. The entities were selected randomly. The only indicator was if the unit had an updated forest management certificate and if happened in the past that the certificate had been suspended. Out of 17 regional directorates of Polish State Holding four were chosen. In Białystok and Gdańsk validity of certificates were stopped. In Poznań an importance of it was re-established in August this year after a short suspension period. Łódź Regional Directorate has possessed the certificate without any breaks.

In each Regional Directorate three forest districts were selected for investigation. They were singled out also randomly.

A respective visit was preceded by phone call when the meetings were arranged. In one case occurred that financial director refused to give permission for survey's conduction in his Regional Directorate. As an explanation were quoted fact that on the FC market exist few companies and the information like audit costs should not be made public.

During the next meetings, all the confidential information, usually not published to wide public were provided after presentation of an official recommendation letter from University with a request to provide for the student such confidential information., signed up by the supervisor of the thesis.

Some of the forest districts as a result of its localization could not be visited. In such situation the questionnaire form was sent by electronic post to those offices which have been requested by phone call to take a look at the questions and prepare all the data needed to answer the questions. After such procedure, in few days a next call was made to fill in the survey.

In Regional Directorates the survey questions were answered by a person responsible for forest certification subject; in two cases, together with the main accountant.

In Forest Districts the interview respondents were chief foresters or their deputy, sometimes only the person involved in forest protection topics.

All the comments and answers were recorded by the author of the survey.

3 Results

3.1 Respondents' general characteristics

- **Type of forest owner/manager.**

All respondents consisted Forest Districts officers (in number 12) and 4 Regional Directorates of Polish State Forests. All of them are managers of forests which belong to Polish State Treasury. Respondents' position and responsibilities as well as gender distribution is presented in Table 1.

Table 1: Position and gender distribution of respondents

unit	respondent's position	gender
RD Białystok	specialist in FC	M
FD Browsk	specialist in nature protection	F
	main accountant	F
FD Bielsk	forest manager deputy	M
FD Hajnówka	forest manager	M
	person responsible for nature protection	F
RD Poznań	main accountant	M
	specialist in forest protection and FC	M
FD Antonin	specialist in forest protection and FC	M
FD Turek	forest manager	M
FD Pniewy	forest manager	M
RD Łódź	marketing department worker(clerk, employee)	M
	person responsible for nature protection and FC	M
FD Bełchatów	forest manager deputy	M
FD Gostynin	forest manager	M
	specialist in forest protection and FC	F
FD Radomsko	forest manager deputy	M
RD Gdańsk	person responsible for forest protection and FC	M
FD Kartuzy	forest manager	M
FD Cewice	forest manager deputy	M
FD Starogard	specialist in forest protection and FC	F

- **Certified forest area.**

Nowadays 100% of area in all investigated units have granted forest management certificate. The forest districts area ranges from 14,000 ha (Turek Forest District) up to 22,166 ha (Stargard). The biggest among all investigated directorates is Białystok Regional Directorate (almost 600,000 ha) and the smallest one is Gdańsk (289,058.75 ha) The area of Regional Directorates and Forest Districts belong to them are presented below (Tab. 2).

Table 2: Area of investigated Regional Directorates and Forest Districts

Regional Directorate/Forest District	area [ha]
1	2
BIAŁYSTOK	**582 613.76**
Browsk	21 000
Bielsk	21 400
Hajnówka	19 656
POZNAŃ	**440 487.00**
Antonin	19 848
Turek	14 000
Pniewy	15 500

1	2
ŁÓDŹ	**292 628.00**
Bełchatów	19 293
Gostynin	16 120
Radomsko	17 133
GDAŃSK	**289 058.75**
Kartuzy	18 075
Cewice	14 580
Starogard	22 166

3.2 Basic attitudes regarding forest certification

First observation during the interviews was the level of respondents' knowledge about the forest certification issue. Whereas in regional directorates it was quite high, then at districts' level officers not always knew what to answer. Their attitude not always was defined precisely. There could be even seen some kind of irritation when questions were asked. The comments to the questions were not provided by district officers. Only brief, short answers.

General trend during the conversation was observed; no one was talking negatively about forest certification during the interview, going through the survey questions. But afterwards, when all the questions have been asked, respondents were more open to indicate their personal opinion on the issue. In one case respondent perceives certification as a "tribute" which Polish State Forests have to pay. According to her/his *"Officially nobody talks negatively about certification in Poland, and the real attitude is hidden."*

One significant weakness in certification was indicated by respondents (3 times). It regards chemicals (fungicides and pesticides) accepted by FSC to be used in forests. The list of them is much more restricted than number of chemicals approved by Forest Research Institute. All the chemicals are bought by General Directorate and distributed to the regional directorates. But in case they cannot be in use is necessary to utilize them what results in costs. Another solution is a request to certifying body to give a permission to employ additional protective chemicals. And what is controversial, such permission is in most cases given, but of course additional payments have to be discharged.

FSC principles and indicators according to which the management assessment is made are perceived as too much international and not really appropriate to Polish conditions. In each Regional Directorate was stated, that PEFC rules should be settled as fast as possible and then certification would be much easier. PEFC emergence on Polish arena would result in FSC system's abandonment. Such opinion was stated in 90% of investigated units.

During the investigation was indicated also that certification is a way to gain huge money by certifying companies. In respondents' point of view direct costs of certification are vast. And expression, that FSC is a non-profit organization was assessed as ridiculous.

- **Relevance of forest certification.**

In the first survey question respondents were asked to indicate their level of agreement or disagreement in a 4-point scale with the presented statements (Fig. 4).
As it is visible on the figure below, the highest percentage of agreement (44%) met the statement that certification is mainly created by environmental groups.
According to respondents certification is relevant only if there exists any environmentally sensitive market. It is used by forest industry mostly as a tool to disprove some attacks and criticism from environmental organizations but is not treated neither as an economical tool, certificate does not contribute to higher prices of products nor as a way to add some extra value to products (to improve its competitiveness).
Overwhelming majority (more than 90%) does not agree with the fact that only certification is a way to ensure supply of public, non-wood utilities of the forest.

To conclude: certification seems to be useful only for industry (and partly for forest enterprise as well) as a protection against criticism from outside. Such opinion could come from the fact that State Forests – it is a national treasure, therefore they were always perceived as the common good (also by foresters).

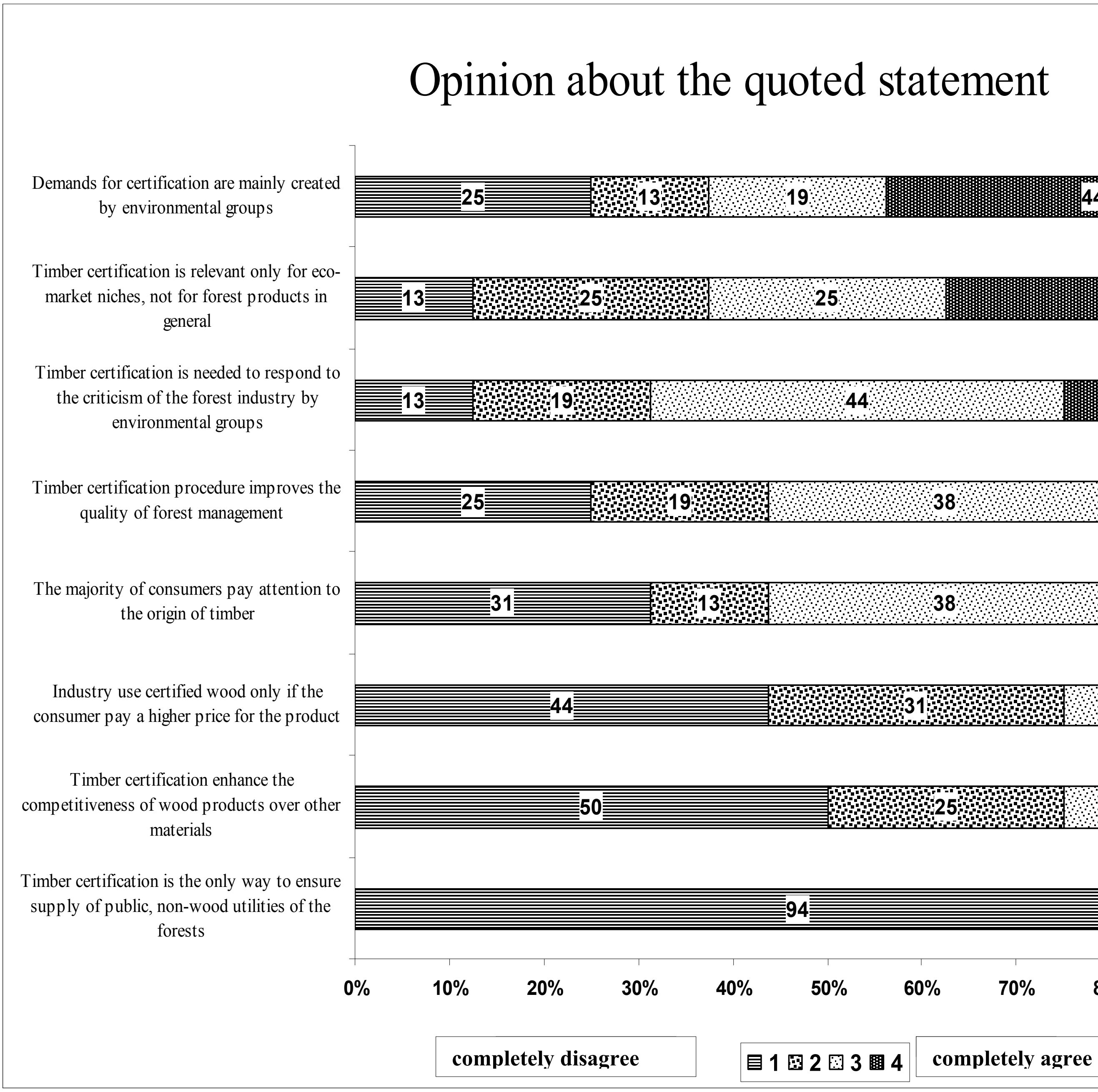

Figure 4: General opinion about forest certification. Level of agreement according to 4-point scale

- **Main reasons why the company chooses to be certified.**

All possible answers given by Regional Directorate representatives are placed in the table below (Tab. 3).

Forest Districts could not choose or decide if they would like to be certified. The order came from the regional level. Such answer was prevailing in forest districts. Forest Districts are the units where all work to fulfil certification requirements is done. Hence, certification there is perceived only as a source of additional work connected with "ridiculous" papers and bureaucracy.

Answers which appeared in regional directorates differ but to a small extent. As first argument was mentioned General Directorate's politics. European certification trend had some influence on the decision taken by The General Director. (However, nobody could explain how strong order came from General Directorate to regional level about being subjected to certification audit). Conviction that certification could improve enterprise image and be a further confirmation that timber comes from well managed forests also were mentioned by respondents.

The prevailing answer was that demand for FSC certificates came from timber industry and companies which buy wood from State Forests.

Also was mentioned NGOs role in the process. Economical favours were indicated as failing to achieve in Polish case.

Table 3: Reasons of implementation of certification given by respondents

ARGUMENTS WHY TO BE CERTIFIED
DIRECTORATE LEVEL
General Directorate politics and decision to take part in certification process
General Directorate suggestions to undergo the certification process
European trend with certification
Willingness to try something new
To improve enterprise image
Certificate could be a good confirmation that timber comes from well managed forest
Timber with the certificate could be more competitive in the world
Demand from industry side, because of export to UK market
Pressure from timber industry side
IKEA was a main mentor who propagated to take part in certification process
Some fluctuations on wood market and certificate which could help for timber industry to sell their products (positive attitude towards timber industry and willingness to help them)
Some pressure of ecological organizations
Economical favours were perceived as a possible, future benefit but not in precise future
DISTRICT LEVEL
Order from Regional Directorate and no possibility to refuse (answered 12 times)
Demand from industry side
Some pressure of ecological organizations

- **Advertisement for customers about possessed forest management certificate.**

The majority of the respondents found that the level of informing the society and buyers about possessed certificate in their Regional Directorates and Districts is high (Fig. 5). About forty percent of them have an opinion that they advertise this issue a lot. Just around ten percent induced to the statement that this level is not high enough.
As the main advertisement and informing form they use the FSC logo and number of possessed certificate on invoices as well as on web pages. No eco-labels are put directly on the timber in the forest.

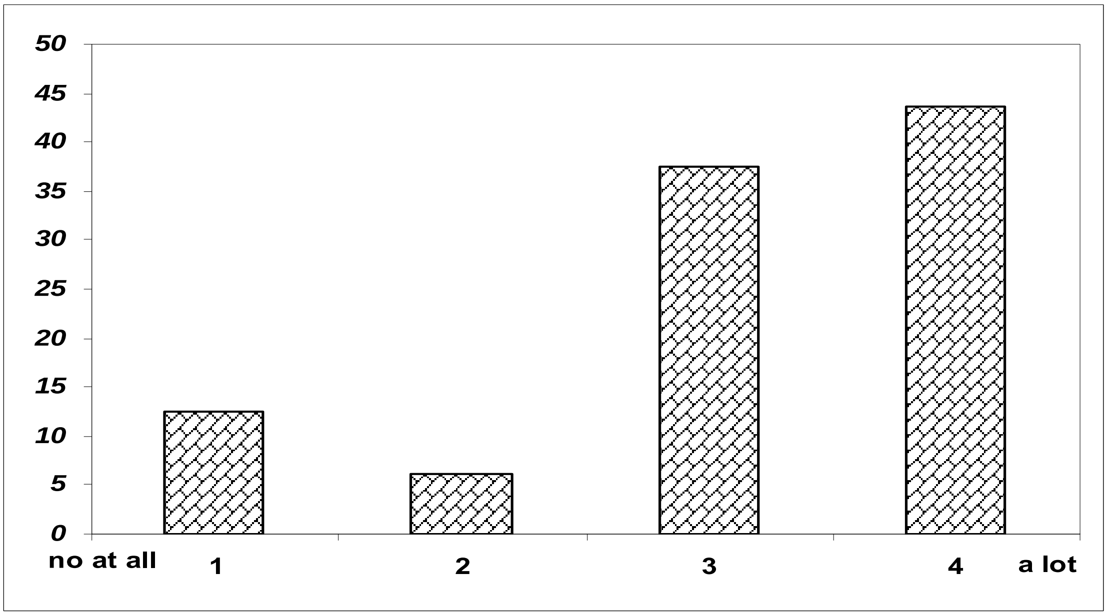

Figure 5: Level of forest certification advertisement

All of the advertisements have only passive form and this could be perceived as a failed chance to reach the potential clients attention and to inform them that the management is well organised. The FSC label placed only on invoices or on web pages makes possible to be seen only by buyers, so rather limited pool of subjects. State Forests' monopoly position on the market and lack of belief that clients could be interested in and would pay attention to eco labels could be reasons to neglect this side of certification's propagation.

3.3 Costs of certification - part 2

3.3.1 Direct costs

- **Direct auditing cost of certification.**

Costs connected with FSC certificate achievement and maintenance during 5-years' time period could be divided into two groups:

1) First type constitutes costs related to audit conduction: pre-audit (first time), annual audits (4 times) and re-audit (per 5 years). Additionally, in a case of some negligence could be required to induce some corrections and liquidate all errors while audit lasts. Whereas the negligence would not be removed during audit, could be necessary to repeat the assessment what would entail additional costs of audit conduction and costs of audit team members' business trip. Those mentioned costs are dependent only on the service supplier and consist an element of tender and later on could be hidden by trade secret.

2) Other costs are connected with annual administrative-accreditation FSC charge (nominal yearly fee). This sum of money is counted and collected by certifying company, according to rules determined by international organization FSC and transfer there. Nominal yearly fee consists of one regular element – equivalence of 10 USD, and remained part of costs depends on the size of the forest which is certified and the type of management conducted there. The certified forests are divided into 8 categories according to intensiveness of forest management. Forest area in determined category multiplied by rate proper for each category taken together give sum of money which make annual administrative-accreditation fee. FSC charge depends much on set aside area size, with increasing area the costs are decreasing.

Those mentioned above two groups of costs are always taken together. During the data collection all the respondents provided certification costs without such division.

3.3.1.1 Białystok Regional Directorate audit costs

The Directorate obtained the first FSC certificate in the year 2000. In regards to audit costs which Białystok Regional Directorate had to bear, the lowest were in the initial year, only 300 EUR (Fig. 6). The rest of total costs in this year were borne by companies- wood buyers – 69 079 EUR. Those companies were owners of chain of custody certificate. This was a reason why Regional Directorate appealed to them with ask to cover part of certification costs in their unit. Costs' share which timber industry would oblige to pay was negotiated between both sides.

In respective years the increase of costs was not significant. The differences reached around two thousand Euros. In year 2005 when the certificate was renewed the substantial rise was observed, whereas in the next two years the costs oscillated around the same border like in a first cycle of audit.

Annual costs per hectare in Regional Directorate are presented in Fig. 7. Those costs seem to be relatively low: from 0.0091 in year 2006 to 0.0193 EUR per hectare.

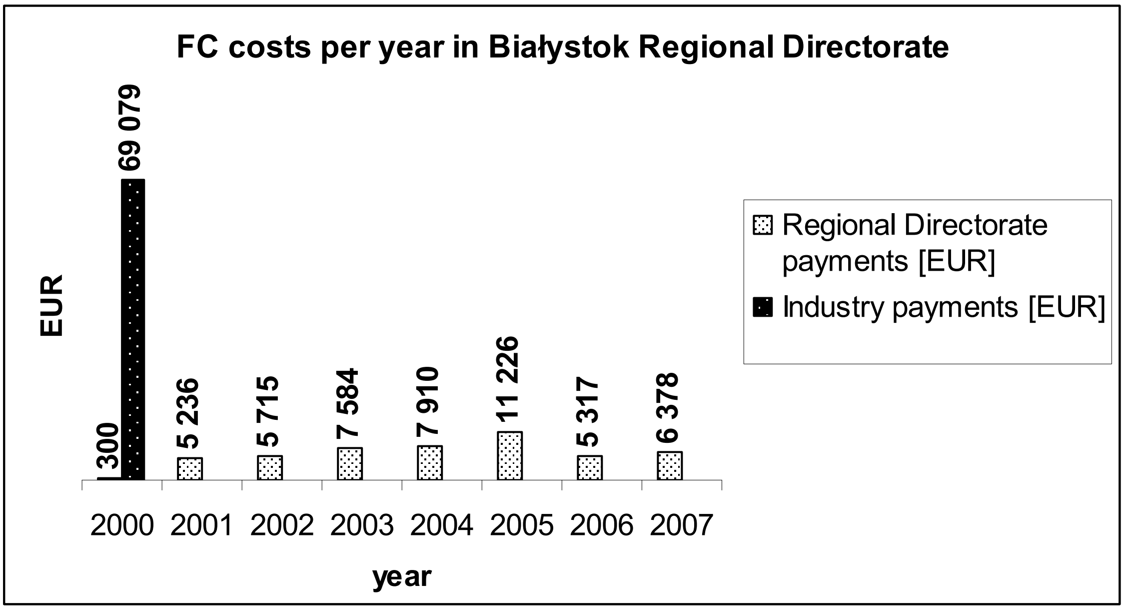

Figure 6: Annual FC costs in Białystok Regional Directorate

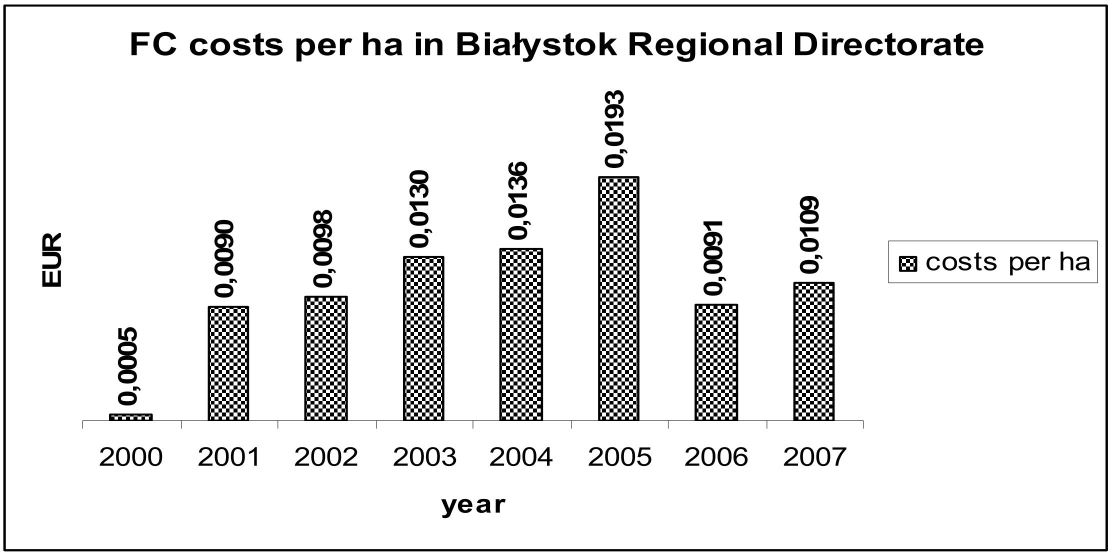

Figure 7: Annual FC costs [EUR] per hectare in Białystok Regional Directorate

3.3.1.2 Gdańsk Regional Directorate audit costs

Gdańsk Regional Directorate the first certificate obtained in the year 1996. At the beginning auditing costs were covered by timber industry and timber buyers (e.g. Seeger Dach, Poltarex). It was important to them to buy certified timber because of chain of custody certificate which they had already possessed. Mostly companies located on Polish north coast created demand for forest management certificate. At that time was observed a significant export of Polish wood and wood products to Danish market and to Sweden. Trade secret prevents from obtaining data regarding those costs.

Since 1996 certification costs were covered totally by Regional Directorate (Fig. 8). Audits were renewed in 2001 and in 2007. Re-audit costs stick out from control audit expenditures. In year 2006 was carried out audit of computer software (715 EUR).

Annual audit costs oscillate from 3,201 EUR to 4,852 EUR. Average re-audit costs are around 7,000 EUR.

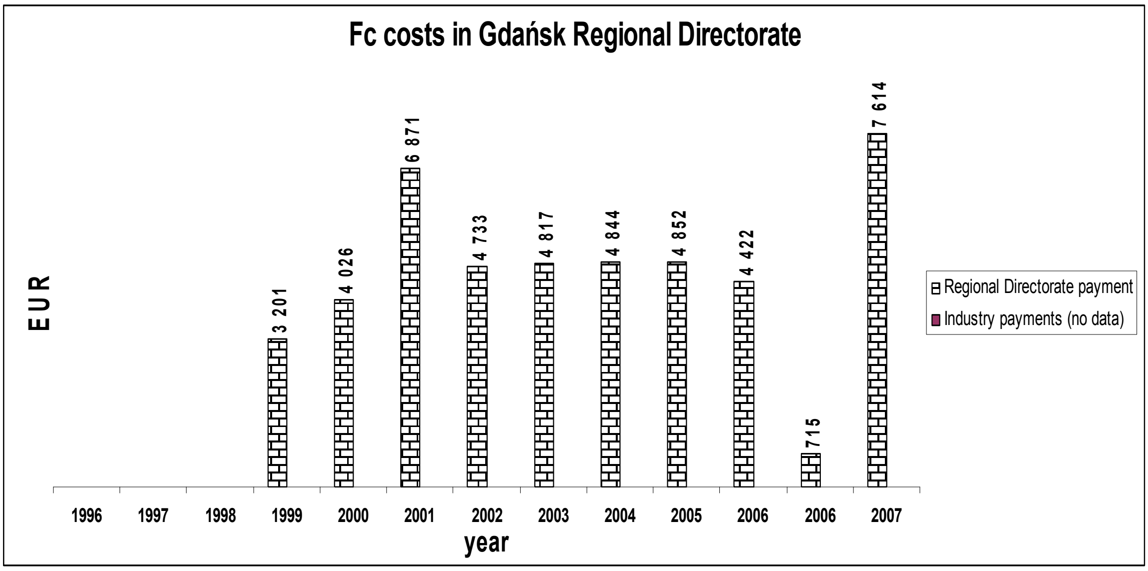

Figure 8: Annual audit costs [EUR] in Gdańsk Regional Directorate

Annual costs per hectare which Gdańsk Directorate had to bear are presented in the Fig. 9. They are higher than it was in Białystok Directorate. They range from 0.0111 to 0.0263 EUR per hectare.

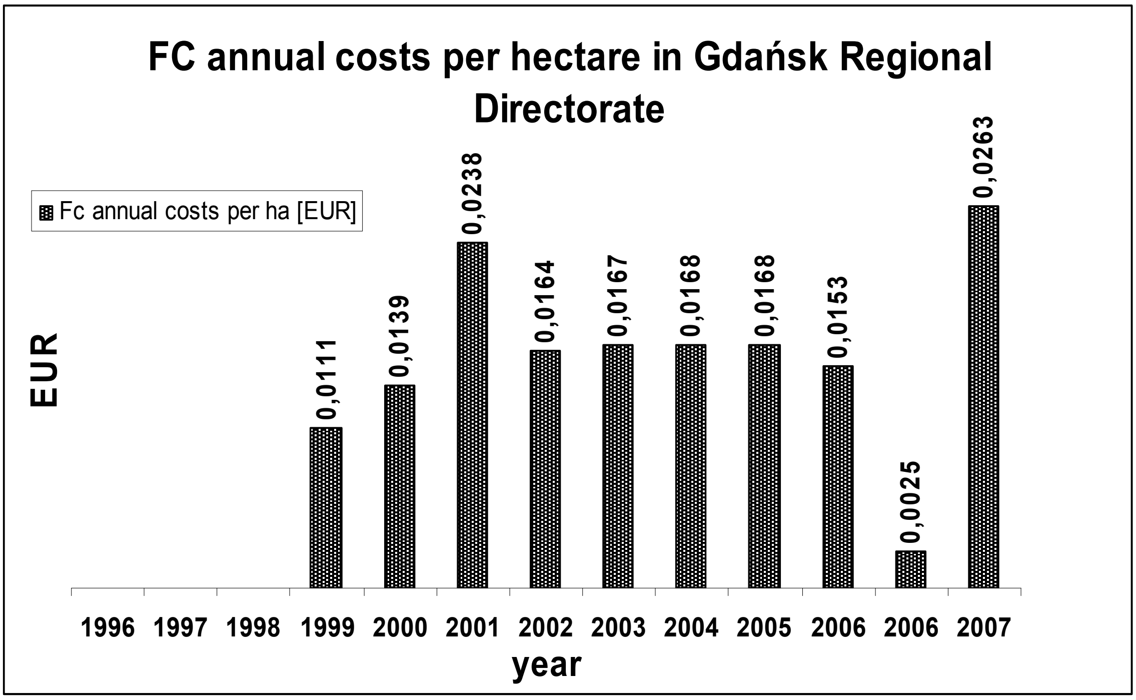

Figure 9: Annual costs [EUR] per hectare in Gdańsk Regional Directorate

3.3.1.3 Poznań Regional Directorate audit costs

In Poznań Regional Directorate the first certificate was given in year 2003 *(Fig.7)*. The highest costs were in the first year. In the next five years significant decrease in costs size is observable. During the control audit in summer 2007, the certificate was suspended. Because faults were not improved during the audit, there appeared a need to conduct a verification audit. That resulted in additional costs in amount around 4 thousand EUR.

Annual costs per hectare in the Directorate are presented on the Fig. 10. The costs are slightly decreasing. Annual audit costs range from 9,432 EUR , by 7,756 and 7,671 to 9,141 EUR.

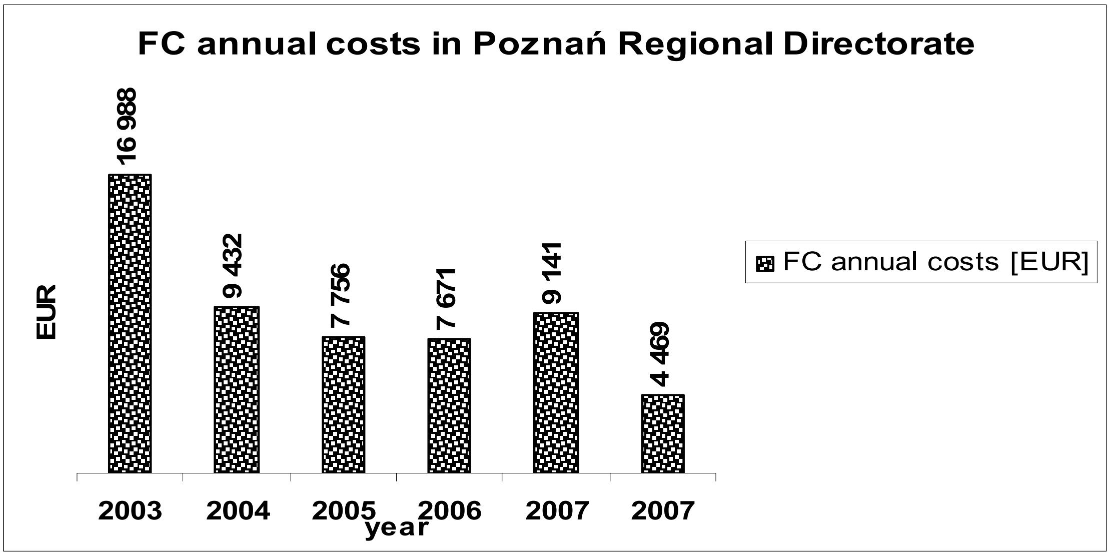

Figure 10: Annual audit [EUR] costs in Poznań Regional Directorate

Annual costs per ha are the highest in the main audit year – around 0.0386 EUR, the lowest in control audit years – around 0.02 EUR.

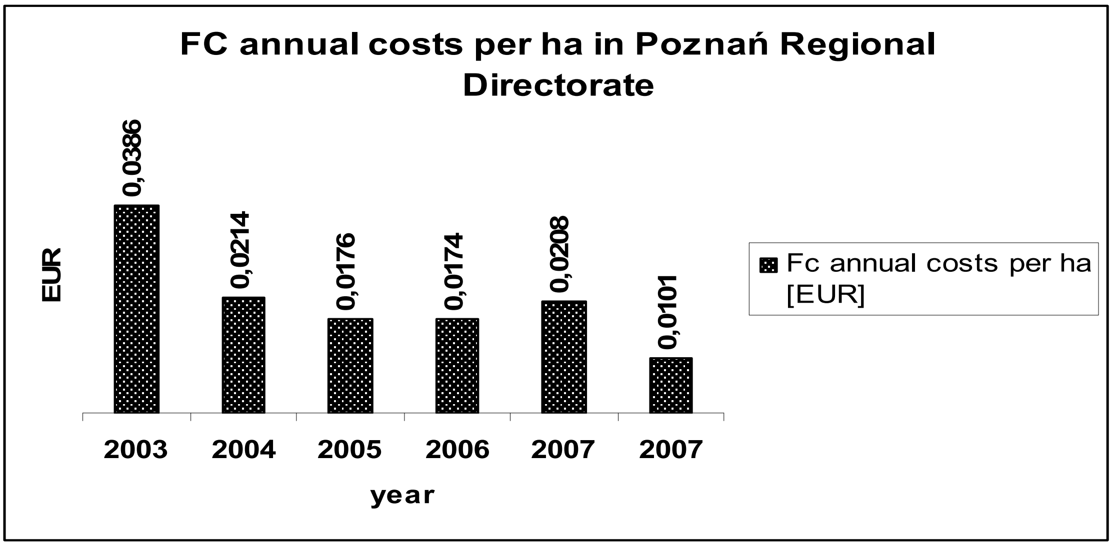

Figure 11: Annual costs per hectare in Poznań Regional Directorate

3.3.1.4 Łódź Regional Directorate audit costs

Łódź Regional Directorate entered certification in year 2003. The highest costs until now have been noted in the first year, around thirteen thousand *(Fig. 12).* In the following years those costs oscillate about 5 thousand Euros. The exception makes year 2007, when not all costs were paid because of some discrepancies between audit reports and Regional Directorate experts' opinion. Those discrepancies regard amount of dead wood left in a forest. The issue is waiting to be solved and then the rest of the payment would be discharged.

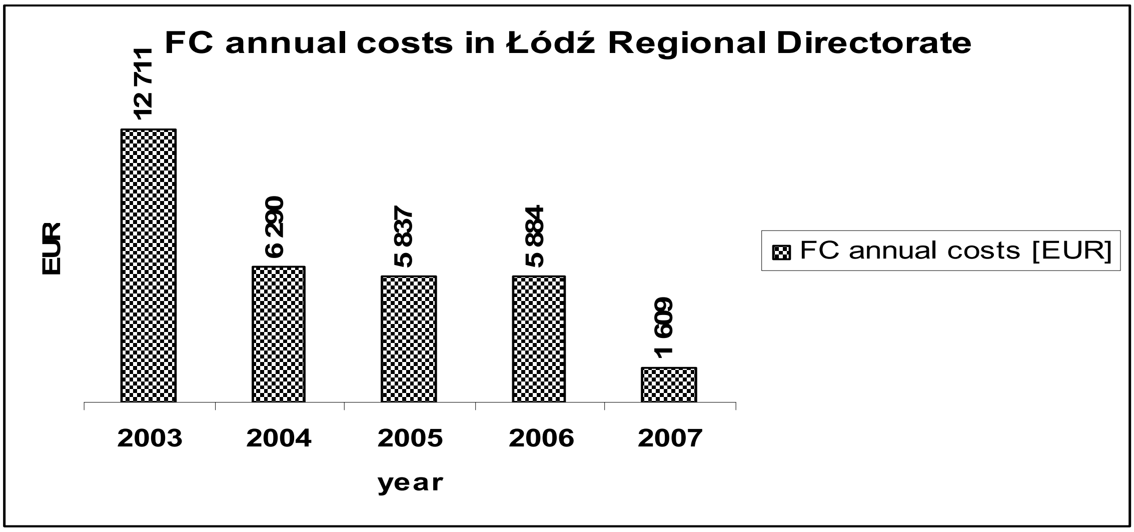

Figure 12: Annual audit costs in Łódź Regional Directorate

Annual costs per hectare in Łódź Directorate are presented in the Fig. 13. Decrease of costs is noted in following years.

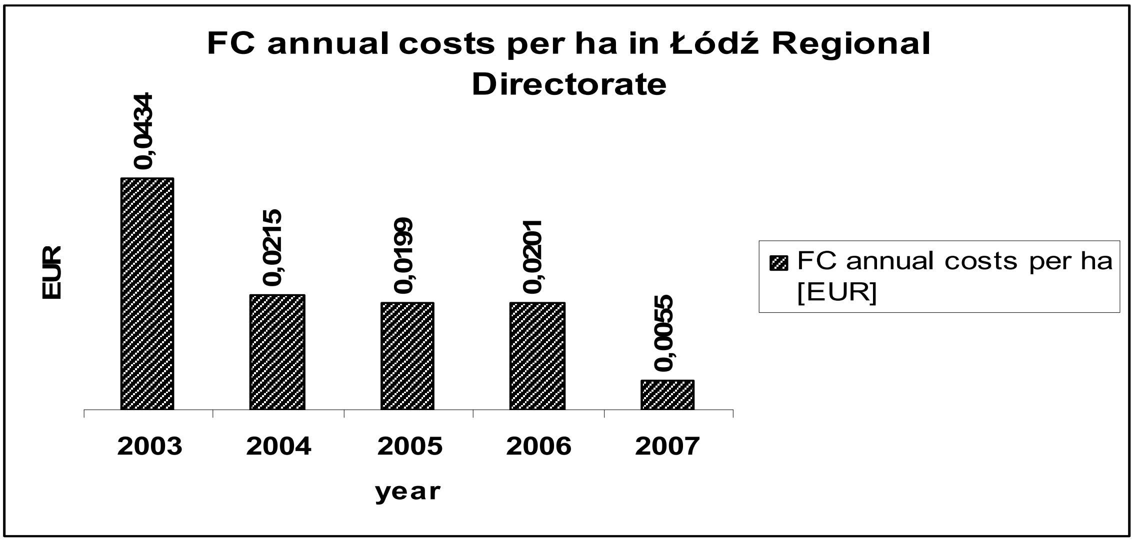

Figure 13: Annual costs per hectare in Łódź Regional Directorate

3.3.1.5 Costs borne by forest districts

All of the certification costs, which Regional Directorate have had to discharge always were divided equally between forest districts.

During the control audit usually 2-3 forest districts out of Directorate are assessed. Always directorate indicates which district could be controlled, but the final decision belongs to certifiers and they make the final decision. It is important not to repeat the audit at the same forest districts.

The costs per forest district in investigated Directorates are presented in the Table. 4. (Gdańsk Regional Directorate comes twice because of two cycles of audit). The highest costs are observable in forest districts belong to Poznań Directorate – above 2,000 EUR. The lowest are in Białystok Directorate – around 1,000 EUR per district.

Table 4: Audit costs per Forest District in chosen Regional Directorates

Regional Directorate	**number of districts**	**FC costs per district [EUR]**
Białystok	31	1224.88
Gdańsk	15	1255.40
Gdańsk	15	1817.64
Poznań	25	2218.26
Łódź	19	1701.62

The costs of forest management certification in Regional Directorates of Polish State Forests in five years' periods are counted in thousands of Euros (Fig. 14). The highest are in Poznań, the lowest in Łódź Regional Directorate.

Comparing those five- years' costs even with annual income obtained from timber sale (Tab. 5) a huge disproportion is visible. Annual income from timber sale is estimated in millions of Euros.

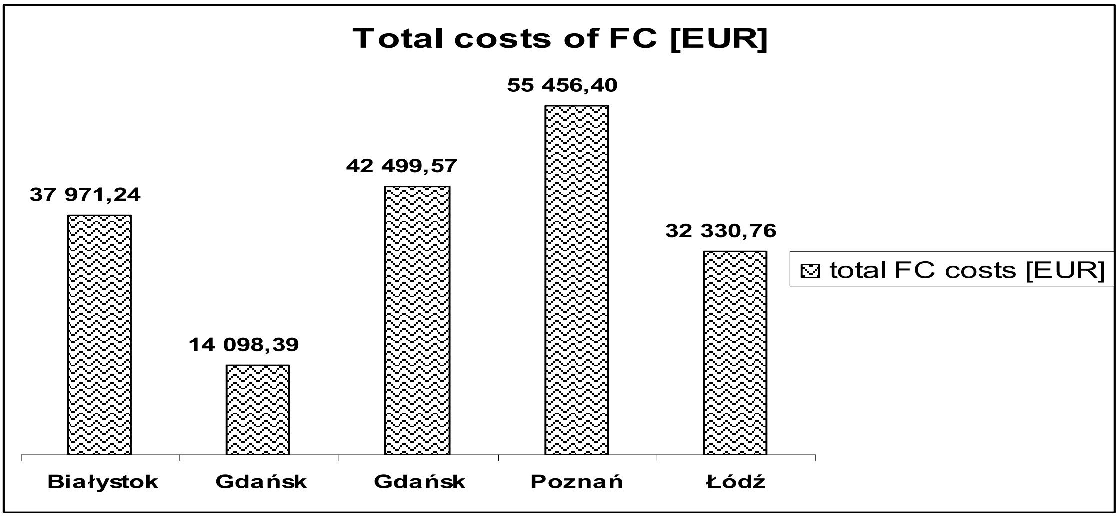

Figure 14: Total forest certification costs in Regional Directorates

Taking all together, the costs of certification which Regional Directorates have to bear comparing to the income are relatively low (Tab. 5).

Table 5: Ratio of average annual certification costs to current annualincome in Regional Directorates

Regional Directorate	average annual FC costs [EUR]	Income [EUR]	ratio (costs vs. income)
Białystok	6 208,28	146 669 922,67	0,00004
Gdańsk	4 609,56	54 266 720,93	0,00008
Łódź	6 466,15	68 929 588,93	0,00009
Poznań	9 242,73	102 564 102,56	0,00009

3.3.2 Indirect costs of certification

- **Indirect costs of certification.**

The indirect costs are those connected with changes of management what are necessary to meet sustainable forestry standards. While direct costs are relatively available and recorded, the indirect costs were not available by any recorded data.

The enterprise has not implemented any important changes in forest management due to certification which could generate additional costs.

Many questions could be elicited by set aside areas, dead wood or forest workers' safety equipment

However, before certification entered Polish forests a big dimension of areas excluded from management had already existed. The area of set aside forests are shown in the Fig. 15.

In Białystok Regional Directorate according to my respondents no areas were excluded from commercial harvesting due to FC requirements. On the Directorate area exists Białowieża National Park and many reserves in Białowieża Forest. Because of this fact amount of set aside areas was always on high level.

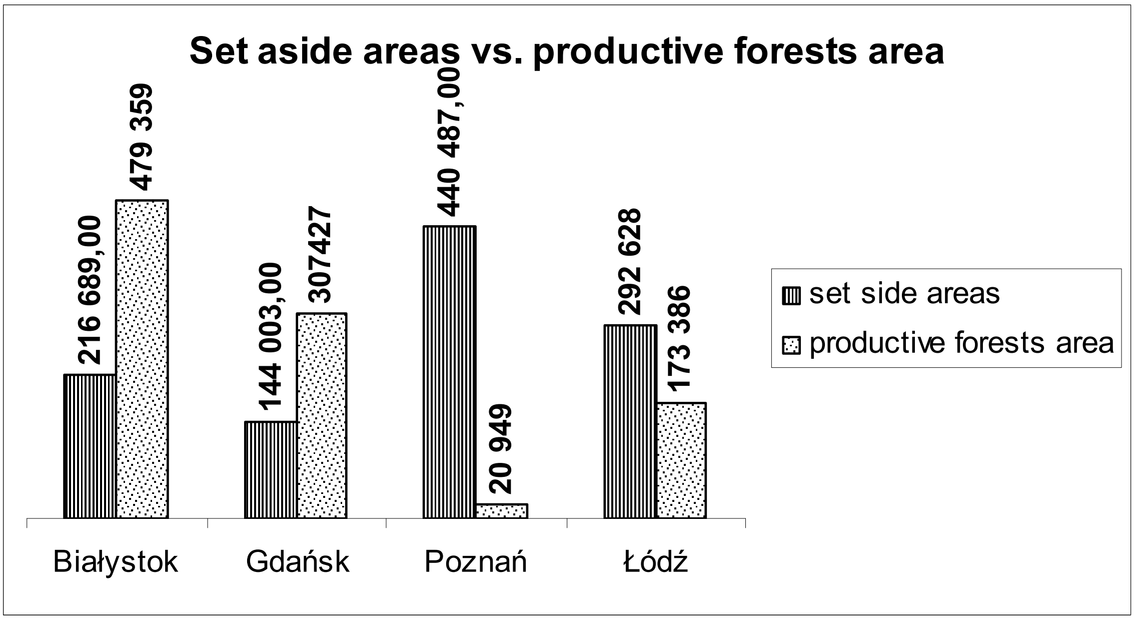

Figure 15: Set aside areas versus productive forests area

The only difficulties which Białystok Regional Directorate has with forest certification are censures for lack of consultation regarding management operations with non-governmental organizations.

The reason why the last FSC certificate was suspended are two spruces in nature reserves, attacked by bark beetles, which were cut without nature conservator's permission. However, according to my respondent, the ask to nature conservator was send, but long period without his response and lack of time to wait (to avoid beetles gradation) caused that decision to cut was made by foresters.

Nature conservator, not Regional Directorate is a person who should consult his decision regarding forest operations in reserves with NGO's.

The next reason why certificate in Białystok was suspended is lack of forest protection plans. But their preparation belongs to voivod's competences, not Regional Directorate.

All of mentioned above activities (like consultation with NGS or with nature conservator) do not cost any money. Only time of waiting for response is needed (around one month).

In Łódź Regional Directorate there were no problems with set aside areas. The amount was adequate to FC criteria. Only proper documentation according to FSC requirements had to be prepared. Such documentation needed consultation with NGOs and local community. It takes around two months and one week for preparation the list of those areas, their placement on the map and in the Internet. The costs are not generated. All the work is included in usual employees'' duties.

Gdańsk Regional Directorate has not faced any problem with set aside areas.

In the history of FSC in Poznań Regional Directorate was a case when certificate was suspended inter alia because of too low percentage of set aside areas. Amount of 2% of aside areas didn't meet FSC requirements (5%).

However, looking deeper into the problem – areas without harvesting existed in the Regional Directorate. The only problem was with its proper documentation. In the Tab. 6 are presented all the components of areas permanently excluded from timber harvesting in the Directorate. Only two types of forest areas became excluded from forest management after FSC audit: "other forest areas" and "bogs and peatbogs". Category "other forest areas" became an official set aside areas only because of FSC requirements, however, "bogs and peatbogs" existed as a set aside areas before FSC came, but the way how it was documented did not meet FSC requirements. Annual FSC audit in 2007 year was a reason to prepare a proper documentation of those areas excluded from commercial management. Documentation allowed to meet 5% threshold of set aside areas. Thanks of it, set side areas arose from 2% up to 5%.

Table 6: Components of set aside areas in Poznań Regional Directorate

COMPONENTS OF SET ASIDE AREAS IN POZNAŃ REGIONAL DIRECTORATE			
TYPE OF SET ASIDE AREA	TOTAL AMOUNT [HA]	ESTABLISHMENT TIME	NOTES
nature reserves	2 143,00	existed before FSC	x
birds nests zones	2 406,00	existed before FSC	x
other forest areas	11 250,00	established because of FSC	not existed and not documented before FSC
bogs and peatbogs	3 439,00	existed before FSC	not well documented before FSC
seed stands	893,00	existed before FSC	x
areas of forests protected from commercial harvesting of timber and management primarily for production NTFPs or services	818,00	existed before FSC	x
SUM OF SET ASIDE AREAS	**20 949,00**		

Looses due to set aside areas and lack of timber harvesting because of its exclusion from commercial harvesting is presented in the Tab. 7.

In 4 types of set aside areas like: nature reserves, birds nests zones, seed stands and in forest protected from commercial management, only sanitary cuttings exist. And they existed before FSC came to Directorate. Those areas haven't been taken to estimate monetary looses.

Coming to "bogs and peatbogs", as a new components of set aside areas in Directorate, should be mention that harvesting of timber there doesn't exists because of well known reasons (lack of access to it or difficult access and not valuable timber there). In such case certification didn't have any influence on harvesting level.

Than, "other forest areas" could rise some difficulties in clear and straightword identification of timber harvesting there. At first, they are areas with difficult access to it, at the same time with low possibility of artificial planting and maintaining proper trees covering.

Table 7: Estimation of harvesting losses due to set aside areas in Poznań Regional Directorate

HARVESTING LOOSES DUE TO SET ASIDE AREAS			
TYPE OF SET ASIDE AREAS	**TOTAL AMOUNT [HA]**	**HARVESTING**	**ALLOWED TYPE OF CUTTINGS**
nature reserves	2 143,00		SANITARY CUTTINGS
birds nests zones	2 406,00		SANITARY CUTTINGS
other forest areas	*11 250,00*	DIFFICULT TO SAY	
bogs and peatbogs	*3 439,00*	NO	
seed stands	893,00		SANITARY CUTTINGS
areas of forests protected from commercial harvesting of timber and management primarily for production NTFPs or services	818,00		SANITARY CUTTINGS

When coming to harvesting and monetary looses due to set aside areas should be considered only "other forest areas" excluded after FSC audit. However, looses cannot be expected as a huge. Under term "other forest areas" are classified areas with low rate of trees covering. To obtain a possible area covered by trees, because all its dimension (11 250.00 ha) cannot be regarded as fully covered by trees, has been taken rate of trees covering equal to 0,2 (typical for areas with single trees), divided by 2. Then, an area covered by trees decreased to 1 125 ha. Next, this area has been multiplied by average timber harvesting per year per ha in Poland (5,9 m3/ha/year) and average timber price in region (56,59EUR). Potential monetary loss on those untreated areas is around 400 000 EUR.

Table 8: Potential monetary loss due to set aside areas

POTENTIAL MONETARY LOSS DUE TO SET ASIDE AREAS							
TYPE OF SET ASIDE AREAS	**SET ASIDE AREA [HA]**	**RATE OF TREES COVERING**	**AREA COVERED BY TREES [HA]**	**POTENTIAL ANNUAL HARVESTABLE VOLUME FROM THE SET ASIDE AREA [M3/HA/YEAR]**	**STANDING VOLUME OF SET ASIDE AREA [M3]**	**AVERAGE TIMBER PRICE IN REGION [EUR/M3]**	**POTENTIAL LOSS**
other forest areas	*11 250,00*	0,2/2	1 125	5,9	6637,5	56,98	378 204,75

Controversial in any field factor like dead wood in forest does not expand money losses caused by certification. Demand for dead wood appeared earlier than Poland accessed certification. General Director Directive 11 from 14.02.1995 and its amendment – Directive 11a from 11.05.1999 give restrictions on leaving in cut forests hollow trees and dead trees to increase biodiversity in forest ecosystem *(http://www.lublin.lasy.gov.pl/strony/1/i/300.php)*.

Some point of views on kind of activities which are demanded by certification and its cost are presented in the Table 9 below.

It is needed to mention the intensity of presented activities. Collecting all information about international conventions was necessary before first audit. Then, only actualization of that is needed and this does not generate a huge increase of time work.

Revision of workers' safety has to be done constantly per whole year (around 5 hours per month)

Trainings for foresters and seminars when all basic information regarding forest certification matter were organized just before implementation of the certification. Nowadays its arrangement is ceased.

Application of any pesticides or fungicides which are not included in chemicals' list provided by auditing body is not used by any of investigated Directorate. Application costs are much too high.

In case when had to be prepared list of set aside areas in the whole of Regional Directorate area (Poznań) it took for one person approximately two weeks of working time. This activity in most cases had place only once – to obtain certificate.

Table 9: Additional activities and their costs caused by certification in all investigated directorates

Additional duties/activities caused by certification	**needed average time [h/year]**	**average salary per hour [EUR/h]**	**costs [EUR/year/ forest district]**
Extra bureaucracy (gaining of information about active international conventions, organization the seminars with staff…)	10	4	40
Revision of workers safety equipment	60	4	3 600
Informing trainings for foresters	12	4	48
Time needed to prepare list of set aside areas	80 hours	4	320
Proposal to add pesticides, fungicides to possible aplicable chemicals in forest **(POTENTIAL COSTS)**			500-600 EUR

Extra bureaucracy costs presented in the Fig. 16 are the sum of costs connected with process of gathering information about international conventions, organization of seminars for forest districts staff – what is equal to 40 EUR/year/forest district and costs emerged after preparation of set aside areas documentation are equal to 320 EUR/year/forest district).

Social costs of forest certification in forest district results from revision of forest workers safety equipment (240 EUR/year/forester), and for district it could be estimated on 3600 EUR/year/district. Social cots are also those expenditures followed by informing trainings for foresters – around 48 EUR/year/forest district.

Forest certification doesn't generate any costs connected with dead wood which have to be left in forests or retained trees – because it is regulated by Polish Forest law.

Summary of all costs connected with certification is presented in the Figure 16 below.

All included costs have the same time and area scale to make all the numbers comparable. Average annual direct costs are shown separately for each investigated Regional Directorate. Indirect costs generated by set aside areas are calculated only for Poznań Regional Directorate – the only case, where such indirect costs could be indicated.

Social and extra bureaucracy costs are calculated for regional directorate with average number of forest districts – 22. Survey was not carried out in each forest district belonging to Regional Directorate (only three forest districts were chosen for each directorate), therefore was not possible to make precision calculation for regional directorate. Average number of forest districts for tree directorates is 22.5 multiplied by sum of annual social and bureaucracy costs give amount of 90180 EUR per year per regional directorate.

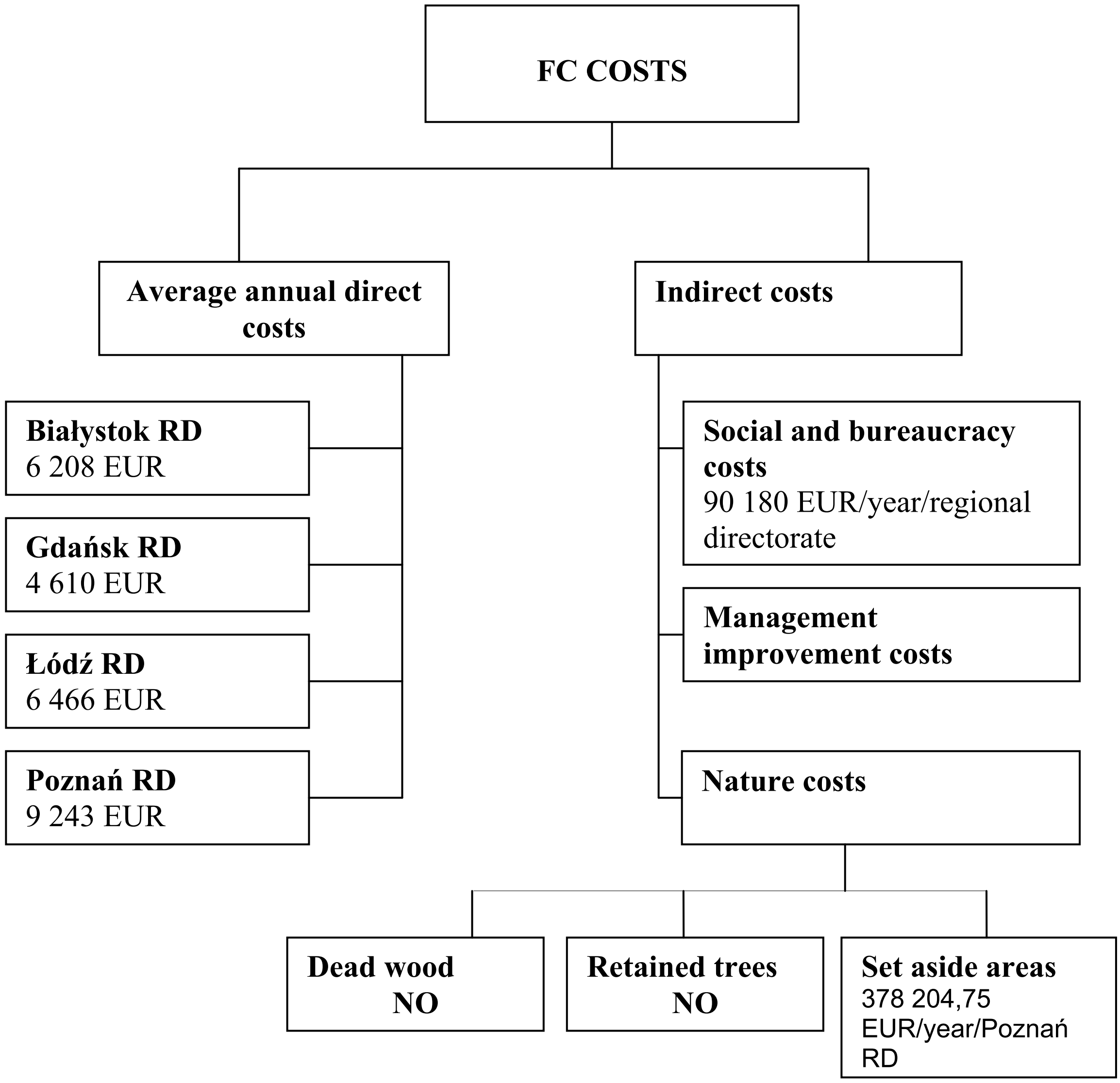

Figure 16: Forest Certification costs

3.4 Certification benefits

- **Main outcomes after company certifying.**

To check what kind of benefits have been obtained after certification implementation respondents were asked to provide their opinion on seven statements in the survey (Fig. 17).

The highest agreement met statement with a possible access to Western markets due to forest certification; although this benefit is not applicable directly to State Forests, but its customers – wood processors and (at the same) exporters. When exporters can freely and without any barriers sell their products on environmentally sensitive markets (of course thanks of FSC certificate) then State Forests have secured demand for its timber.

Certification, according to respondents' opinion could be perceived as a tool which secures demand for timber and improves quality of service. But such advantages, again, work only in case of timber buyers, not raw material producer – State Forests.

Lack of agreement was found in case of statements about improved operational efficiency or price premium.

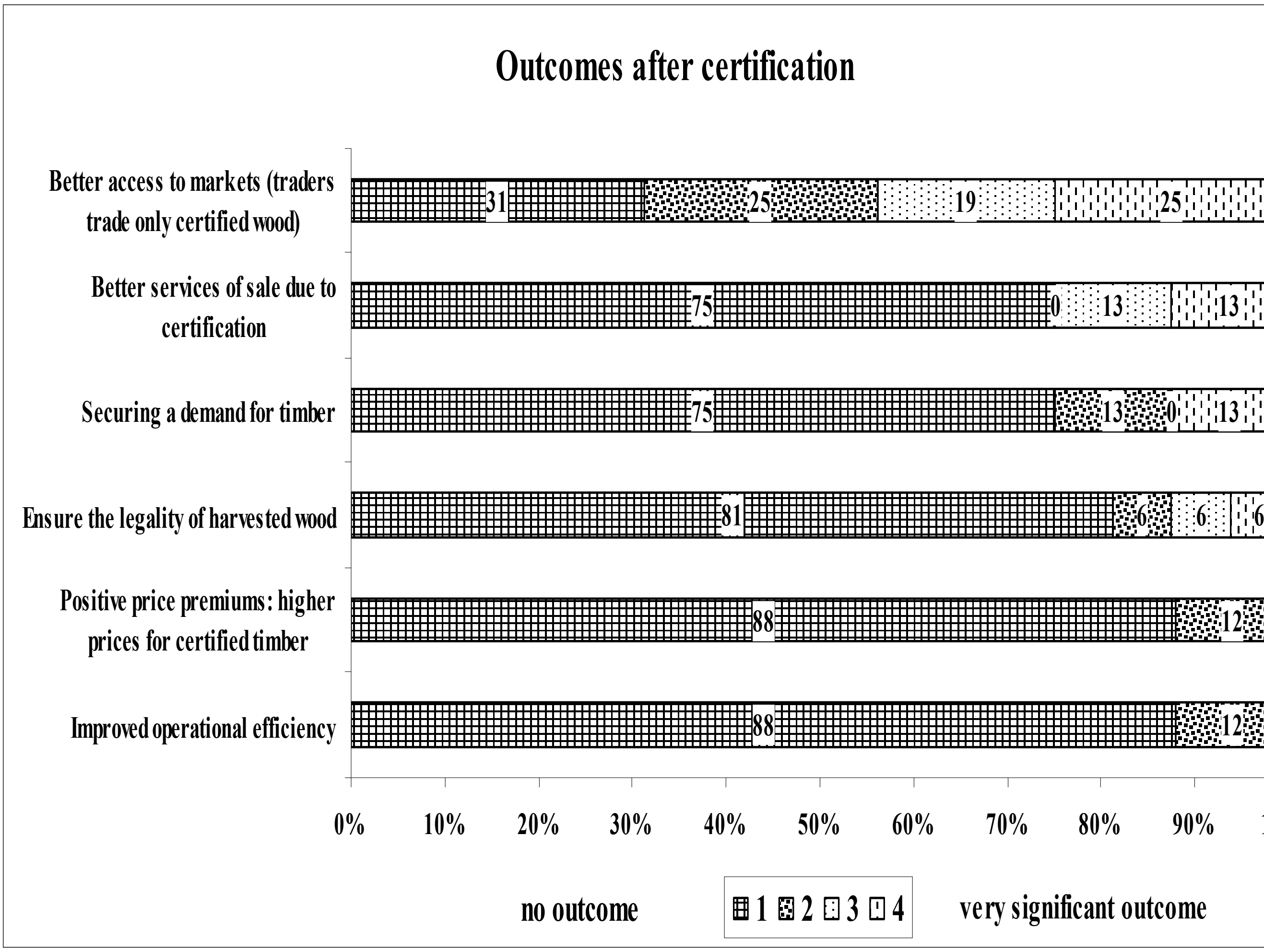

Figure 17: Level of agreement with possible outcomes of forest certification

- **Expectations' fulfilments after certification.**

The forest management certification is not perceived by most of the respondents as any reason to be proud of . Around thirty percent of respondents inclines to the opinion that certification have met their expectation in satisfying level (Fig. 18). Such opinion was indicated by respondents in Regional Directorate.

Forest districts' representatives were less enthusiastic. Seems to be obvious that admission that certification brings any positives or improvements in management would only justify the opinion that management before it was led not in a proper way. With such statement foresters could not agree. Mentioned by respondents outcomes are presented in the Table 8.

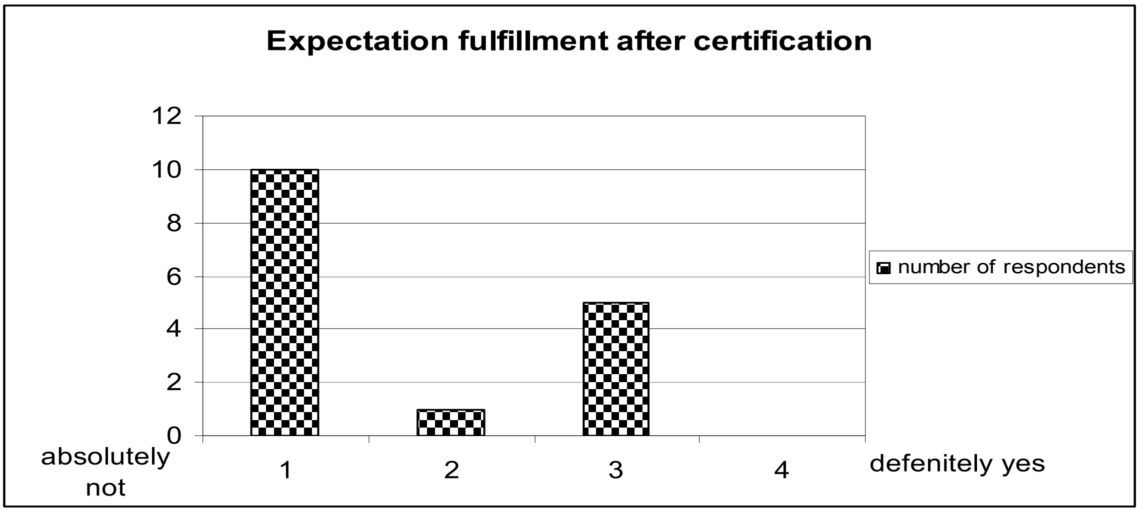

Figure 18: Expectations' fulfilment after certification implementation

Table 8: Certification outcomes according to respondents

Certification outcomes	
negative	**positive**
our dreams is they stop make a troubles for us	joining of internationally recognized organization -FSC
lack of influence on prices or on demand (Forest Districts)	hopefully profits would come in the future
any expectations were fulfilled because were no any before its implementation, order came from Regional Directorate	the process let us to see our weak points
lack of expectations (answer appeared12 times)	

- **Export direction after certification.**

Among all questionnaire respondents there were no case that the Regional Directorate or Forest District started exporting timber to any foreign market because of forest management certificate. It seems to be obvious since Poland does not export raw material, rather furniture and carpentry. Only 201 000 m^3 of round wood is exported. The share of exports in relation to production is the following: for sawnwood 24%, for wood-based panels 30%, and for furniture 87% *(The State Forests Information Center, 2006).*

- **Percentage of the total sales secured due to FC.**

The selling on domestic market in any amount was not secured due to forest certification. No influence of certification on this fact was observed.

- **Have you noticed that FC helps to increase the amount of buyers from existing markets?**

Majority of respondents (12) agreed that no increase of buyers from existing market was observed after certification implementation. Only single cases (4) quoted some changes from the previous situation *(Fig. 19).*

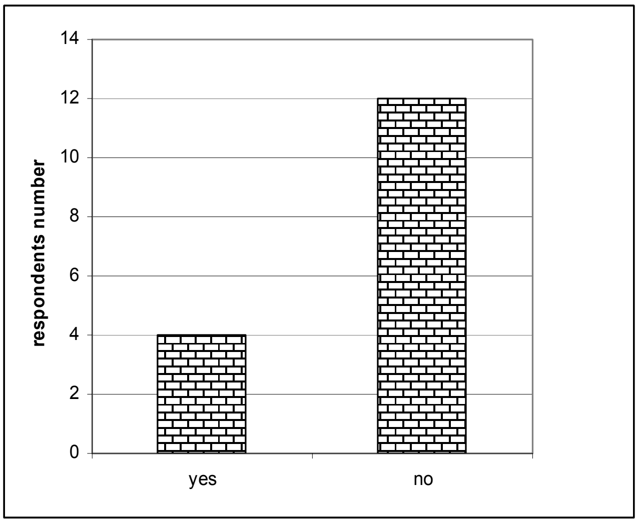

Figure 19. Percentage of units where increase in buyers after certification was observed

- **Level of buyers' interest in certified products as compared to non-certified products.**

To answer the question if buyers show any interest in certified timber most of respondents quoted that no interest (75%) or a very low interest (25%) in wood is visible among all of contractors (Fig. 20). Such results are caused by the fact that no uncertified wood is sold Regional Directorate if it has a FSC certificate. Then, there is no competition between certified and non-certified raw materials.

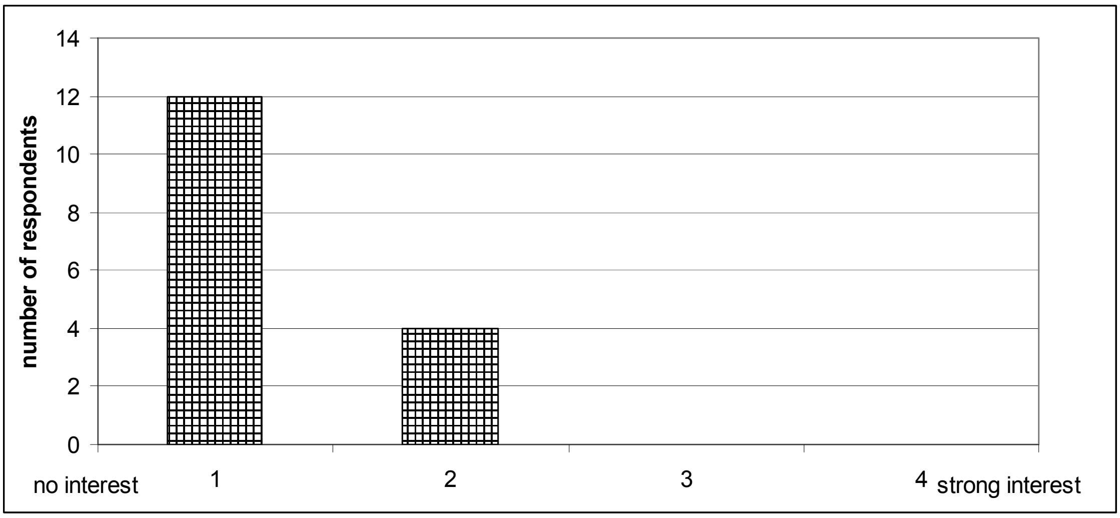

Figure 20: Level of buyers' interest in certified products

- **Additional sales of timber because of FC.**
- **Percentage of the sale surplus amount to due to certification**

No additional sale caused by certification was observed in most of the studied cases (Fig. 21). Only eighteen percent of all respondents said "yes". However, no exact figures could prove such positive answer.

Figure 21: Sale surplus due to certification

Resume of Forest Certification benefits is pictured in the Figure 22, below. Whereas, social and organizational effects such as higher interest in forest workers safety and regular revision of their equipment is quite understandable, than weak points which had been enhanced by forest certification audit regards not sufficient documentation of set aside areas and also not much attention paid for workers equipment. But such statement came only from one Regional Directorate, where certificate was suspended because of mentioned reasons. Other investigated units did not indicated any benefits coming from possessed certificate.

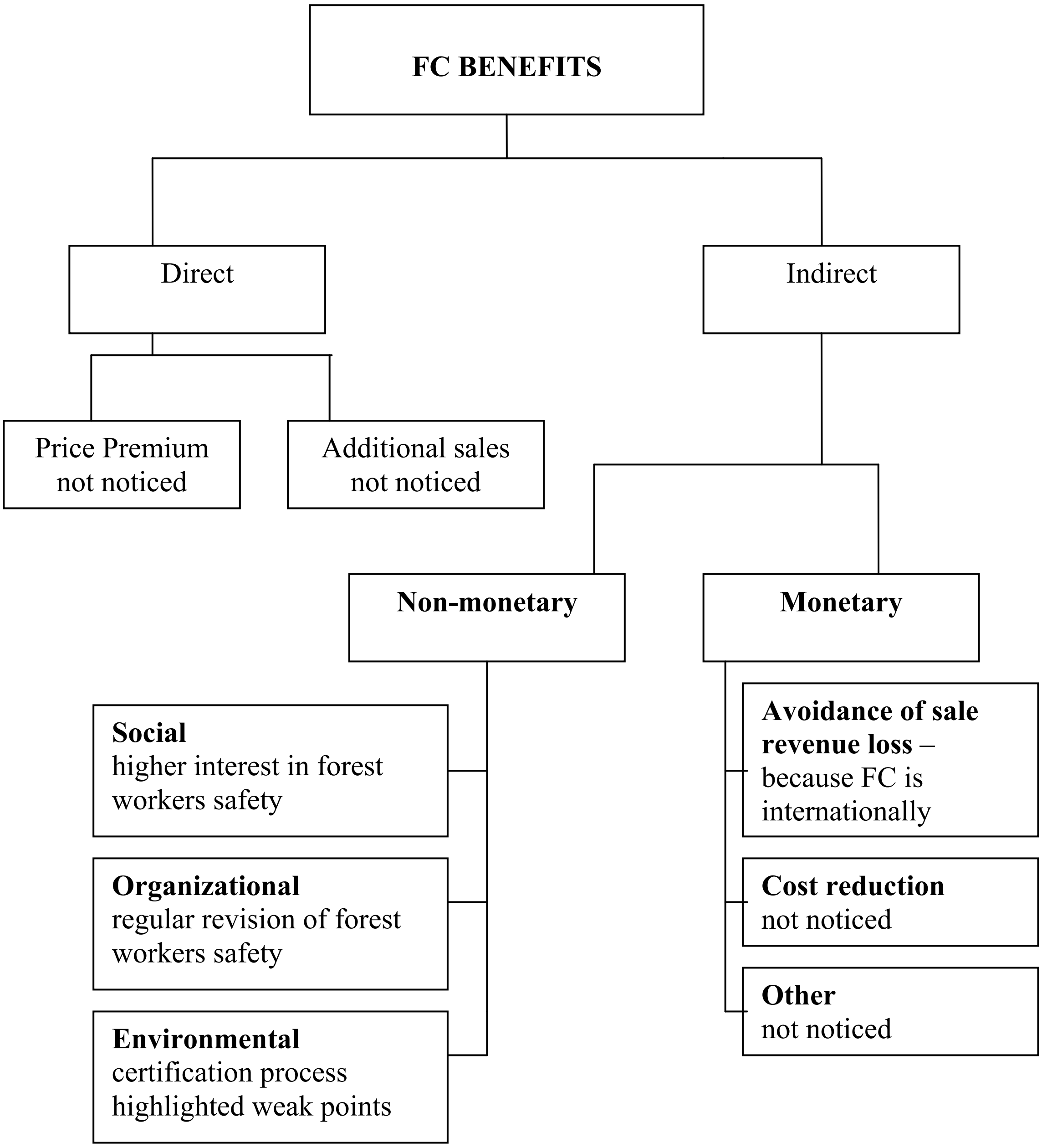

Figure 22: Forest Certification benefits

4 Discussion

In Poland forest management certification under FSC scheme has been a fact for almost 11 years.

As survey findings show certification in Poland is not employed as a market instrument. The truth is that there is no market in final consumers in Poland. But it seems that there is indication for some (maybe weak) market by processing industries, buying timber from the State forests and export processed products.

The Polish society's awareness about origin of wood products is really low. This appallingly low level of consciousness about the environment, reflected in quite advanced market for certified products, is not caused by our ignorance or lack of good will to worry about the environment. The cause lies in society's wallets. Since they are not so wealthy, and only essential or a little bit more than essential needs could be satisfied, the awareness about the environment will be constantly low.

Another aspect of low awareness within society about certification could be also lack of any forms of advertising it from producers' side. As we can see only passive forms of informing are popular (e.g. FSC label on invoices, on WebPages…). By such limited means of propagation, which are low profitable, should not be expected that usual grass man would be well informed and any interest about the issue will germinate in her/his mind.

This lack of well dispersed information forms and advertising about possessed FSC certificate very likely is caused by the monopolist position of State Forests as a timber producer on Polish arena. Shortage of any competition from other producers' side contribute to the situation where willingness to fight for the customers' attention is totally unknown to the main forests' manager – State Forests organization.

Since there is no demand for certified products on domestic market, then maybe would be possible to speculate that timber and wood products' export plays a role of the main driver for certification. But data shows that Polish State Forests export only a small share of its production (no more than 1%). The main amount of export is created mostly by selling of already processed wood products such as furniture, carpentry, paper and etc., etc.... However, forestry and the timber industry play strategic roles in the development of the State, and any rulings must be consistent with a strategy for the balanced development of our country in its current phase. An assumption must be made that certain forms of cooperation between the timber industry and forestry will be and should be induced by the State *(Paschalis-Jakubowicz, P. 2006)*.

But this branch of production does not belong to primary timber producer – State Forests. Profits appear to be far away from primary producer – State Forests.

Then, to conclude, incentives provided by market premiums for certified products cannot be given as a main reason of certification implementation. Only, if take into account that FSC scheme is internationally recognized and if State Forests would like to make wood products exporters' life easier and avoid any threat of foreign buyers boycotts then such explanation could be acceptable and very probable for certification implementation. Investigation shows that at the beginning timber buyers took active part in certification process. They paid some percentage of direct certification costs (Białystok and Gdańsk Regional Directorates). Other sources say that also in Toruń Regional Directorate its director decided to apply for certificate because of pressure from its contractors. The need for certified timber appeared when Toruń Directorate's clients faced problems with export especially to British market. All of them also made a declaration to pay some part of audit costs *(Ostrowska G., 2001).*

Pressure from timber industry seems to be a strong argument during the decision making if to conduct certification in a directorate.

In previous part of the thesis was mentioned also that ownership structure of forests in Poland was heavily criticized, especially after political transformation in the country (1989). Whereas in other transitioning countries (e.g. Lithuania, Estonia, Latvia) process of reprivatisation had started, in Poland forestland continuously remain in the State's hands. Only ca one million of forest owners with average forest area 1.3 ha is noted.

Such situation could not meet society's acceptance. Also organizational system and management of state forests for outside observers gave an impression as too hermetical and centrally steered *(Oktaba, J., Paschalis-Jakubowicz, P. 2005)*. Then, such ethical argument could lead Polish State Forests' institution to the conclusion that they have to behave in a socially acceptable manner. And that is why they seek for certification- a confirmation and permission to keep the management in a current way. Quoting Klingberg (2002) certification "in Poland was a tool used by government officials to stop privatisation and to regain a reputation for responsible forestry tarnished by practices in past decades. It is questionable whether certification made State forestry more open to society. For sure it dwarfed forests' reprivatisation.

As survey founding shows, certification in Poland was also created by environmental organizations' demand, used as a tool to response some criticism towards timber industry companies.

Following Polish scientist's opinion –"Desires for public acceptance and market strength were the primary factors facilitating introduction of certification to Polish forestry" *(Paschalis-Jakubowicz, P. 2006)*.

Coming to foresters' community attitude to forest certification issue are observable two approaches depending on the respondents' position. In a lower level of hierarchy – in forest districts – certification was perceived as unnecessary and which makes foresters professional life more difficult only. Especially annual audits are source of stress for them. Certifiers are seen as those who look only for foresters' mistakes and their behaviour is interpreted as unfriendly.

Foresters' lack of trust toward auditing companies and auditors shares Prof. Laurow, who states that during the audit responsible for it persons try to gather some information regarding productive potential of Polish forests, timber prices, production costs or sale direction. Collecting such kind of particulars according to Laurow seems to have a character of an economic interview *(Ostrowska G. 2001).*

Foresters significantly showed their lack of consciousness that certification could be useful for any reasons.

Such point of view could reflect the fact that certification has to assess respondents' work and sometimes maybe even subconsciously they underrate its meaning. Lack of understanding of certification idea could cause unwillingness to be proud or glorify it.

In majority of investigated Regional Directorates the level of knowledge and rather deeper understanding of the issue was observed. On this level officers understand demand for certified wood products which exists on Western market. They understand, that purchaser of their timber would sell it on environmentally sensitive markets. Concern about export markets does appear to play role in explaining why State Forests participate in FSC scheme.

The results of this study provide also a view on the costs and benefits side of forest certification. Direct costs of FSC audits are well recorded and available. The same cannot be said about indirect costs and direct and indirect benefits of forest certification. Limiting factor which makes impossible to assess in details those expenditures and profits is insufficient assessment by managers and not well recorded all those elements. The only explanation to the problem could be the rules according to which forest management in Polish State Forests is led. Permanently sustainable management in State Forests has a few targets:

- maintenance of forests with their positive influence on climate, air, water, soil, human's life and health conditions and environmental balance.
- protection of forests and ecosystems
- protection of soils
- protection of water
- sustainable production of timber and non-wood forest products

Order of all management goals is not accidental. The most important is sustainability of forest management. On the last place is production and at the same – economy and monetary profits taken form forestry. One could risk a statement, that economy has not entered Polish forestry yet. When it focus on sustainable management, does not count all expenditures connected with management. And this is the reason, why indirect costs of forest certification (and not only forest certification) are not well recorded and widely available. The same explanation could be applicable also for benefits of forest certification. Maybe with a time, when situation on wood market would look less optimistic, when each coin would have to be count, managers would be able to present all costs and all incomes in more accurate way. Hopefully, also costs and profits of forest certification would be perceived as important and worth of attention.

Annual cost of certification per hectare fluctuates around 0,01 EUR . The highest are noticed in Poznań and Łódź Regional Directorates and possible reason for that could be lower amount of set aside areas comparing to total forest area. Another explanation could be the fact that in those two units audit was carried by NEPCon SmartWood Program certifying company and in Białystok and Gdańsk – SGS Qualifor Program.

Proportionally to the income from timber selling – certification costs are very low.

Coming to indirect costs of certification the most controversial could be those connected with set aside areas. It has to be clarify, that in investigated Regional Directorates areas excluded from harvesting they have always existed due to Polish law specification even before FC entered Polish State Forests. However, in two cases (Poznań and Łódź Directorate) documentation of such areas did not fulfill certification requirements and had to be refined according to them. Documentation preparing does not cost any money, just time is needed. The total amount of time is estimated on 2,5 hours per month.

Additionally, lack of well recorded data concerning certification such as visits of auditor team members or staff trainings make impossible to estimate those expenditures. Predominates opinion that Polish forestry meets all sustainable forestry requirements and not significant or even no changes in management were implemented and no costs generated.

Difficult is also to derive any substantial profits in forestry due to certification. The most desirable profit like positive changes in price level of lumber has not been noticed. But in some sources was found that sale of lumber has been considerably facilitated by meeting the certification requirements *(Paschalis-Jakubowicz, P. 2006)*. Environmental or social improvements neither were found during the study. Certification does not add up anything new to these aspects.

Another issue is market benefits. Environmentally sensitive market in Poland is questionable. Export of timber does not exist. Only producers of furniture and other wood elements who sell their products abroad could gain any price premium if so. The market benefits do not exist in any degree for the timber producer – Polish State Forests.

Also the certification contribution to, e.g. biodiversity conservation in Polish case is very modest or none.

Study has shown that certification could be treated in Poland only as a tool to improve the image of the organization. The wood industry's requirements drove State Forests to participate in the process. All the costs have to be borne by enterprise, whereas about possible benefits can talk only traders. Forest certification just exists in Polish Forests. Required more strict compliance with restrictions fuelled fear of making mistakes in any activity by foresters and office workers, especially in forest districts. No additional recompense or recognition are given for work connected with certification. Foresters' knowledge of what certification could bring is relatively low and the issue treated as a necessary evil.

Literature review shows that the greatest achievement of certification in Poland is its common use, resulting primarily from the consistency of the certification rules with the forest management rules in Poland. Efforts to attribute the effects of certification in Poland to the pressure of different groups' of interest are perceived as a negative feature of applied certification in many quarters. But to expand its effectiveness, framework standards, specific for given region or given country should be stipulated *(Paschalis-Jakubowicz, P. 2006)*.

5 Conclusions

Forest Certification could not add anything new to Polish forestry. Forest management quality as always pro-ecological much more exceeds certification requirements. Proper management caused that indirect costs of the process are marginal or not generated at all. Audit costs could not be perceived as huge. Its share in regional directorates' income is insignificant.

Coming to benefits part the most visible is advantage which certification brings for timber purchasers. Thanks to certification export to environmentally sensitive Western markets still exists.

Benefits lie far from primary timber producer. Profits are reaped by wood products sellers. To answer the question if they obtain any price premium for products with FSC certificate further research is needed. But it is certain that they do not pay any additional money to State Forests –the timber producer.

There is difficult to talk about benefits different from saved access to Western markets or saved timber demand from exporters.

Forest workers' morale level has not increased due to certification. Neither society's knowledge nor awareness about the environment does not seem to broaden significantly.

However, forest certification has been quickly dispersed in Polish State Forests. Hence, it should have a range of effects, therefore further research to clarify more precisely the nature of its effects would be needed.

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7 List of figures

8 List of tables

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Survey on economical effect of Forest Management Certification

Dear representatives of forestry enterprises

This survey is intended for forestry enterprises passed Forest Management Certification on FSC system. The survey aims to clarify costs and benefits that enterprises incur in connection to forest certification.

The questionnaire consists of four parts. The first part concerns objectives and expectations of enterprise regarding forest certification. The second part regards direct auditing costs and indirect costs that enterprise incur to bring up the existing level of forest management to FSC standards. The third part examines if the expectations towards forest certification became fulfilled and what are the outcomes if its implementation. Finally, in the fourth part there are questions which refer to some specific information about your company.

Please, note that the information you provide are confidential and personal information will not be exposed in survey results.

If you have any questions about survey, please, consult:

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BASIC ATTITUDES REGARDING FOREST CERTIFICATION – part 1

1. What is your opinion about the following statements? (Mark appropriate cells with an "x" in the table below): ***Completely disagree 0 1 2 3 completely agree***

	1	**2**	**3**	**4**
Demands for certification are mainly created by environmental groups				
The majority of consumers pay attention to the origin of timber				
Industry use certified wood only if the consumer pays a higher price for the product				
Timber certification enhance the competitiveness of wood products over other materials				
Timber certification is needed to respond to the criticism of the forest industr by environmental groups				
Timber certification is relevant only for eco- market niches, not for forest products in general				
Timber certification procedure improves the quality of forest management				
Timber certification is the only way to ensure supply of public, non-wood utilities of the forests				

2. What have been the main reasons for why did your company choose to be certified?

3. Do you advertise to your customers that you are certified? *(Mark appropriate cells with an "x" in the table below):*

Not at all	1	2	3	4	A lot

COSTS OF CERTIFICATION – part 2

4. What is direct auditing cost? *(Write the costs [EUR] in an appropriate fields in the table below)*

year 0	***year 1***	***year 2***	***year 3***	***year 4***	***year 5***	***year 6***
pre-assessment	main assesment	annual assesment	annual assesment	annual assesment	annual assesment	re-assesment
Comments:						

Besides direct costs connecting with audit FC requires indirect costs needed for transformation active forest management system to level of FSC standards. It is important to distinguish usual enterprise investments from costs arising during certification process. Understanding the FC as an independent process on enterprise with own costs and benefits allows assessing its effect objectively.

To evaluate FC indirect expenditures is necessary to look at FSC principles and indicators which mainly generate those costs.

Further you will find questions-tables of feasible additional FC costs caused by arrangements on forest management improvement. These costs are classified relative to ten principles of FSC. You are asked to mark only those that take place on your enterprise and undoubtedly related to FC.

In the questions 5-14, please, choose the arrangements and distinguish costs which your company has to spend only because of certification from these which are the part of usual forest management costs.

[Please, fill the tables below pay attention to the costs complexity for the arrangements. We ask you to define at the beginning what kind of cost: monetary or social (extra working time) or both of them does the arrangement require. The monetary cost contains costs which are connected with monetary loss due to FC requirements such as environment restrictions (set a siding the area for protection, retaining living trees,…) and direct monetary costs due to FC requirements like purchase new techniques, save equipment and operations excluding salary and social cost like business trips, preparing special meetings.]

5. *COMPLIANCE WITH LAWS AND FSC PRINCIPLES*

Arrangement	No	Are there any special unit who conducts the operation? If YES, please specify (internal – "old" company stuff or external unit). If the outsourcing company take care about the arrangements could you specify the extra cost due to FC requirements.	Time (extra time) needed for operation (e.g. additional paper work) if it's internal managed (if yes) *[hours/year]* Average salary of worker take care of the arrangements	Monetary loss due to FC requirements(retaining trees, set aside the area,…)	Monetary costs due to FC requirements (purchase of a safeness equipment,...)
1. Gaining of information about active international conventions, organization the seminars with staff.					
2. Elaborating the list of non-compliance active legislation with FSC principles (consultation between FS certifier, and FMO)					
3. Making a public written statement of commitment to adhere to the FSC Principles and Criteria					

6. *TENURE AND USE RIGHTS AND RESPONSIBILITIES*

Arrangement	**No**	**Is there any special unit who conducts the operation? If YES, please specify** **If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?**	**Extra time needed for operation if it's internal managed *[hours/year]*** **Average salary of worker take care of the arrangements *[Euro]***	**Monetary loss due to FC requirements [Euro]**	**Monetary costs due to FC requirements and operations excluding salary and social cost *[Euro]***
1. Identification a local communities' legal or customary use rights (both timber and non-timber), meeting with communities					
2. Preparation and implementation a documented procedure for resolution of disputes regarding land use rights					

Are there any indigenous people living on or close by forest area?
IF YES go to the next question
IF NO go to question 12

7. ***INDIGENOUS PEOPLES' RIGHTS***

In Poland it is not applicable since Poles are native people on homeland

Arrangement	**No**	**Is there any special unit who conducts the operation? If YES, please specify** **If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?**	**Extra time needed for operation if it's internal managed *[hours/year]*** **Average salary of worker take care of the arrangements *[Euro]***	**Monetary loss due to FC requirements [Euro]**	**Monetary costs due to FC requirements and operations excluding salary and social cost *[Euro]***
1. Identification indigenous communities (IC) within the forest area (making a list)					
2. Meeting with IC for elucidation their use rights					
3. Preparation written procedures for provision of fair compensation in case forest management has damaged the property or resources of indigenous people					
4. Identification the sites of special cultural, ecological, economical and religious significance and accompanying costs (marking the sites in the field, including in the maps)					

8. COMMUNITY RELATIONS AND WORKER'S RIGHTS

Arrangement	No	Is there any special unit who conducts the operation? If YES, please specify If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?	Extra time needed for operation if it's internal managed *[hours/year]* Average salary of worker take care of the arrangements *[Euro]*	Monetary loss due to FC requirements [Euro]	Monetary costs due to FC requirements and operations excluding salary and social cost *[Euro]*
1. Providing chain saw operator with use and safety equipment: a) helmet with eye and ear protection b) high visibility vest/ jacket c) safety boots d) cut-proof trousers and first					
2. Posting - the warning signs - fire extinguishers - medicine chests at access roads to sites with ongoing logging					
3. Purchase and setting on sites radio and movable communication					
4. Expertise of environment impact of forest management on residential population					
5. Development the order of loss compensation damaged to residential population in compliance with low					
6. Organization the seminars with participations with stakeholders					

9. *BENEFITS FROM THE FOREST*

Arrangement	No	Is there any special unit who conducts the operation? If YES, please specify If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?	Extra time needed for operation if it's internal managed *[hours/year]* Average salary of worker take care of the arrangements *[Euro]*	Monetary loss due to FC require-mants [Euro]	Monetary costs due to FC requirements and operations excluding salary and social cost *[Euro]*
1.Improvement the harvesting techniques to avoid log damage and damage to remaining trees					
2. Minimization of waste generated through harvesting operations, on-site processing and extraction					

10. *ENVIRONMENTAL IMPACT*

Arrangement	No	Is there any special unit who conducts the operation? If YES, please specify If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?	Extra time needed for operation if it's internal managed *[hours/year]* Average salary of worker take care of the arrangements *[Euro]*	Monetary loss due to FC requiremen ts [Euro]	Monetary costs due to FC requirements and operations excluding salary and social cost *[Euro]*
1. Preparation the documentation on evaluating monitor system to minimize the impact of site disturbing operations					
2. Training workers the methods of logging according to sustainable forest management					
3. Identification, record of rare and endangered species of flora and fauna present within the forest area and, mapping their habitats, consultations with NGOs					
4. Training of workers the handling with habitats of rare and endangered species					

5. Identification representative samples of existing ecosystems, marking in maps and on site; consultations with authorities, NGOs and other stakeholders.					
6. Retaining the following elements of forest ecosystem: -old and hollow trees, - standing deadwood and snags -seed trees of commercial valuable species					
7. Protection identified representative samples of existing ecosystems on a (minimum of 5%)					

11. *MANAGEMENT PLAN*

Arrangement	No	Is there any special unit who conducts the operation? If YES, please specify If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?	Extra time needed for operation if it's internal managed *[hours/year]* Average salary of worker take care of the arrangements *[Euro]*	Monetary loss due to FC requirements [Euro]	Monetary costs due to FC requirements and operations excluding salary and social cost *[Euro]*
1. Gaining and analysis of non-timber production, mapping a location of the products					
2. Developing special documentation describing plans for identification and protection of rare, threatened and endangered species.					
3. Making a public summary of the primary elements of management plan (publishing in internet and posting in local communities centres)					

12. *MONITORING AND ASSESSMENT*

Arrangement	**No**	**Is there any special unit who conducts the operation? If YES, please specify** **If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?**	**Extra time needed for operation if it's internal managed *[hours/year]*** **Average salary of worker take care of the arrangements *[Euro]***	**Monetary loss due to FC requirements [Euro]**	**Monetary costs due to FC requirements and operations excluding salary and social cost *[Euro]***
1. Developing special separation and registration systems including storing places for certified and non-certified timber					
2. Marking certified and non-certified timber					
3. Training stuff responsible for registration system of certified and non-certified timber					

Do you have a High Conservation Value Forests on leased forest area?
IF YES go to the next question
IF NO go to the question 17

13. ***MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS (HCVF)***

Arrangement	**No**	**Is there any special unit who conducts the operation? If YES, please specify** **If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?**	**Extra time needed for operation if it's internal managed** ***[hours/year]*** **Average salary of worker take care of the arrangements** ***[Euro]***	**Monetary loss due to FC requirements [Euro]**	**Monetary costs due to FC requirements and operations excluding salary and social cost** ***[Euro]***
1. Consultation with NGOs to identify high conservation value forests					
2. Developing the way of protection the HCVF					

Do you have a plantations of fast growing species on leased forest area?
IF YES go the next question
IF NO go to the question 18

14. ***PLANTATIONS***

It is not applicable in Poland

Arrangement	**No**	**Is there any special unit who conducts the operation? If YES, please specify** **If the outsourcing company takes care about the arrangements could you specify the extra cost due to stricter FC requirements?**	**Extra time needed for operation if it's internal managed** ***[hours/year]*** **Average salary of worker take care of the arrangements** ***[Euro]***	**Monetary loss due to FC requirements [Euro]**	**Monetary costs due to FC requirements and operations excluding salary and social cost** ***[Euro]***
1. Conducting ecological expertise and monitoring assessment the impact of plantations on ecosystems and biotopes					

CERTIFICATION BENEFITS – part 3

15. What are the main outcomes after certifying your company? (Mark appropriate cells with an "x" in the table below):
no outcome 1 2 3 4 very significant outcome

(points coloured in red are not applicable in Poland)

	1	**2**	**3**	**4**
precondition to get long-term loan				
advantage to get long-term loan				
desirable rate of loan from famous investment banks				
better access to markets (traders trade only certified wood)				
positive price premiums: higher prices for certified timber				
improved enterprise image towards external stakeholders				
better services of sale due to certification				
securing a demand for timber				
improved operational efficiency				
ensure the legality of harvested wood				
Other – specified by respondent				

16. Has FC implementation met all your expectations? *(Mark appropriate cell with an "x" in the table below):*

Absolutely not	1	2	3	4	Definitely yes

If no, than, state please which are missed?

17. To which countries and companies did you start to export timber due to certification?

18. How big % of the total export/ sales has been secured due to FC?

(%)
(m^3)

19. Have you noticed that FC helps to increase the amount of buyers from existing markets?

- ◻ ***Yes***
- ◻ ***No***

If yes, how much in % the surplus of buyers have you acquired?

20. Have your buyers shown higher interest in certified products as compared to not certified products? (Mark appropriate cells with an "x" in the table below):

No interest at all	1	2	3	4	Strong interest

21. Cou
ld you specify what kind of buyers are mostly interested in certified products:

- ◻ foreign companies
- ◻ domestic companies
- ◻ producers of certain items
- ◻ final consumers

22. Have you got any additional sales of timber because of FC?

- ◻ ***Yes***
- ◻ ***No***

23. How much in % the sale surplus amount to due to certification?
% /(m^3)

24. Could you provide some information about the price premium for certified products?
Please, fill the table below.

Buyer (Country)	**Volume of certified timber (m^3) delivery**	**Share of the contracts specified price premium for certified timber (%)**	**Rate of price premium for the m^3 of certified timber (€)**
Comments:			

SPECIFICATION QUESTIONS – part 4

25. What kind of forest owner are you?

- ◻ forest holder
- ◻ forest leaseholder

26. What forest area has been certified till now?

……………..ha………..% of total area

27. Please give the following information about your company.

- ▪ Localization in a country the company's main headquarter …………………………
- ▪ sales: …… ……………………………………..m^3/tones
- ▪ total export share: ………………………………%
- ▪ main directions of export:
  - ✓ Nordic Countries (Finland, Norway, Sweden)…… %
  - ✓ other EU countries ……………………………….. %
  - ✓ Eastern Europe …………………………………… %
  - ✓ American boreal/temperate ………………………. %
  - ✓ tropical ……………………………………………. %

Thank you very much for your willingness to participate in the survey!