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Trawica, dated 8 June 2021

STUDY No. 2
EXPERTS OF THE NATIONAL SECRETARIAT FOR NATURAL
RESOURCES, ENVIRONMENTAL PROTECTION AND FORESTRY
OF THE “SOLIDARITY” TRADE UNIONS (hereinafter referred to as NATIONAL
SECRETARIAT)

(comprising an in-depth analysis
of social and economic impact
of would-be implementation of Biodiversity Strategy in Poland by 2030.
called ‘Bringing nature back into our lives’, hereinafter referred to as the Strategy)

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1. Theses substantiated in Section 4 of this Study

In another study (hereinafter referred to as the First Study) - the experts of the National Secretariat of Natural Resources, Environmental Protection and Forestry of the Solidarity Trade Unions (the National Secretariat) showed that the directive statements (announcements, postulates and expectations), included in the Strategy, are not justified in the Polish actual environment concerning forest ecosystems, from the perspective of shaping of natural well-being, because in case of their realization in legal acts of authoritative nature (directives, laws implementing directives and/or the EU regulations), they will be even tragically harmful for forest environment in

Poland. In addition, the provisions of the Strategy are in clear conflict with the Polish legal system, bred by the Environmental Law and related laws.

In contrast, this (Second) Study developed by the experts of the National Secretariat is devoted to the assessment of the social and economic impact of the would-be implementation of the Strategy versus the national realities.

As you know, the majority of forests in Poland are State Treasury owned and remain under the management of the State Forests. The State Forests has been operating for decades in with a specific organizational and legal status. The status has been around for over one hundred years. It works well from many perspectives and there is no reasonable alternative to it. This was demonstrated in the extensive studies that have recently been presented by the National Secretariat to the President of the Republic of Poland and the Prime Minister. The State Forests is a public, non-financial enterprise of a specific nature. In addition to the market output and the so-called global output for its own final purposes, the State Forests operations are connected with a considerable amount of non-market output. The non-market output in question consists of:

- a) free-of-charge services of the above-standard support by the State Forests to the public administration in the fulfilment of its duties both in the spheres of dominion and empire:
 - financed from operating costs of organizational units of the State Forests
 - or
 - financed with resources from the Forest Fund, including their direct transfer to the beneficiaries,but also by
- b) the production by the State Forests and making available free-of-charge for collective, club and individual consumption (consumption in the sense of the nomenclature used in the EU Regulation on National Accounts) of non-tangible forest management products from the performance of non-productive functions of forests.

This Study demonstrates that following the would-be implementation of the Strategy, the State Forests will no longer be able to value the above-mentioned non-market output involving the generation and making available for consumption of non-tangible forest products - because:

- a) the areas covered by approximately 2.7 million ha of forests will not be subject to multifunctional sustainable forest management, and thus the non-productive functions of forests, which are a component of this management, will not be performed,
- b) forests referred to in letter (a):
 - in a relatively short timeframe they will reach in their landscape development the state of dynamic equilibrium of the processes of exchange, transformation and flow of matter, energy and information (both within inactivated forest landscapes and between them and their surroundings) - which practically excludes an option that these landscapes will fulfil on their own the environment-forming functions and the functions of environmental protection, and certainly the function of above-standard sequestration and above-standard storage of carbon dioxide (which is discussed in more detail in the First Study),
 - will inevitably be exposed to decay and transformation into devastated landscapes (also discussed in more detail in the First Study),
- c) forests, which will remain a resource used by the State Forests (or - what is most probable - by the entities which will emerge as a result of the disintegration State Forests) to carry out multifunctional sustainable forest management, will inevitably have to be used under the

assumption that the age of generational replacement of forest stands will correspond to the age of highest economic profitability, which from a methodical perspective excludes an option to assess the value of the above-mentioned non-tangible forest products (which is discussed in more detail in other studies commissioned by the State Forests, available on their official website).

This Study also shows that if the Strategy has been implemented through strict protection of approximately 10% of the land area of the EU Member States, including the so-called primary forests and old-growth forests, the State Forests will lose their ability to function following the self-financing principle. They will become a company permanently in the red, and the Forest Fund will become a permanently dysfunctional tool. The contribution of the State Forests to Gross and Net Domestic Product would decline radically. The operating surplus earned by the State Forests in value terms will become negative.

If, in case of realization of the Strategy, the option of maintaining the current organizational and legal form of the State Forests is considered **at all**, it would have to be accompanied by the following solutions:

- 1) the age of generational replacement of tree stands should be equated with the age of highest economic profitability,
- 2) financing of existing non-market output of the State Forests not related to the performance of the non-productive function of the forest, including:
 - funding of forestry research and development,
 - subsidizing the operation of plant nurseries,
 - subsidizing the construction of local roads,
 - maintaining the Kostrzyca Forest Genome Bank and the Gołuchów Forest Culture Centre,
 - monitoring of the forest environment,
 - conducting a large-scale forest inventory, including a large-scale inventory of natural resources in forests,
 - financing of management work (to the extent that forest management plans serve as another instrument used to implement the Council of Ministers' policy),
 - funding to address the impact of large-scale force majeure conditions in the State Treasury-owned forests,
 - financing many other activities that consist in above-standard support for public administration, both in the dominion and empire spheres (catalogued in detail in Appendix No. 3 to this Study);it would have to be financed entirely with funds related to subsidies from the state budget (under Article 54 of the Forest Law),
- 3) following the amendment of the Act on preservation of the national nature of strategic natural resources of the country - the following should be marketed:
 - a) social benefits of the State Forests, covered so far by the universal direct accessibility of the general public to the forests (use of forests for short-term leisure and tourism, free collection of forest produce, including mushrooms and berries)
 - b) the production by State Forests of non-tangible forest management products, including primarily Carbon Dioxide Removal Units (CARs), on which the amount of carbon stored by forests depends
- 4) would need to boost drastically stream of revenues from auxiliary profit generation activities.

However, given that:

- a) revenues from auxiliary activities of forest districts currently account for about 0.1% of total revenues of the State Forests,
- b) charging a fee by the State Forests for the public's ability to directly benefit from the universal accessibility to the forests would inevitably meet with the most far-reaching public disapproval, without compensating for the loss of revenue from timber sales,
- c) propagation (which is by all means desirable) of the Forest Carbon Farms concept, covered by the pilot program currently run by the State Forests, neither cannot be considered a remedy for the loss of revenues from timber sales (and according to the concept maturing in the European Commission, it would not apply to forests left under the forest management, but rather to the forests scheduled for inactivation);

well, taking all this into account, it should be assumed that by means of the aforementioned activities, the State Forests, if the Strategy has been implemented, will not be able to build a capacity to self-finance their activities and maintain functionality related to the Forest Fund.

From a legal perspective, it would obviously be unacceptable for the State Forests to maintain the apparent self-financing capacity by continuously providing it with public aid for market operations in the form of budget subsidies, including EU subsidies. Moreover, the solution which would consist in financing by means of earmarked subsidies (on the basis of Article 54 of the Forest Act) all the activities of the State Forests, which consist in substandard support of the public administration in fulfilling its duties (both in the empire and dominion sphere), would be devoid of ratio legis, and even inconsistent (if not abiding by law in letter, then certainly in "spirit") of the Public Finance Act.

Thus, the most likely scenario of events resulting from the possible implementation of the Strategy may include:

- a) statutory dissolution of the State Forests National Forest Holding (Państwowe Gospodarstwo Leśne Lasy Państwowe),
- b) establishment of a public finance sector entity (e.g. executive agency) or entities to "take care" of forest areas that will be subject to inactivation, and to carry out tasks that currently fall to the State Forests in supporting (both in the empire and dominion spheres) public administration not related to realization of non-productive functions of forest,
- c) transferring a significant part of the staff employed in non-manual positions in State Forests organizational units to the above-mentioned unit or units of the public finance sector,
- d) statutory definition that forest management consisting in production of timber is carried out by commercial law entities based on the highest economic profitability without the obligation to perform extra-production functions of the forest for free (it has to be taken into account that timber is a marketable good in the EU; it is not legally possible to treat timber as a public good sold at prices regulated by units of the public finance sector)

Regardless of the impact on the State Forests following the would-be implementation of the Strategy, there will be:

- a major reduction in employment in forest service companies;
- a significant reduction in the supply of wood, which will result in
- "disruption" or far-reaching weakening of the forest-timber production chain, which in Poland has developed mainly on the basis of domestic national economic entities, that are not residents of foreign entities. The furniture industry, the garden program industry, the pallet industry, the veneer and plywood producers industry, as well as the primary wood processing industry will lose their competitive

positions on the domestic, European and international markets (they will cease to be one of the key brands in the Polish economy);

- shutdown of numerous domestic entities of the national economy based on wood raw material purchased from the State Forests;
- a necessity to import timber and the outflow of capital abroad. The cost of transporting timber from abroad (Belarus, Ukraine, Russia, China) will cause an outflow of capital from Poland to the raw material supplier countries (shortening of supply chains);
- unemployment growth in the regions where lumbering industry is currently a major or significant employer;
- minimize the primary timber processing that is currently driving rural development, increasing unemployment in these regions;
- a definite reduction in the supply of fuel to the population.

There will be pressure to shed off employment at the State Forests. It will be unjustified on economic grounds and would not follow good management practice - because most of the so-called administrative costs of the State Forests are fixed costs (regardless of the output volume generated by this entity). Moreover, to a quite substantial extent, these are the costs of above-standard services rendered to the public administration (both in the empire and dominion spheres).

2. Methodology for making the assessment of the value of the impact of the would-be implementation of the Strategy

The valuation of the impact of the would-be implementation of the Strategy was carried out with the appropriate use of source data (see Appendix No. 1 to this Study, published only in the digital version), which consists of:

- a) information provided in the State Forests' financial statements and business reports (Appendix No. 1, tab called "Reporting Data"),
- b) information made available by the General Directorate of State Forests, used by this unit to estimate the area of forests (**2.7 million hectares**) predicted with the highest probability to be inactivated in case of possible realization of the Strategy (Appendix No. 1, tabs with own names: "Total area of Poland", "Database on nature reserves", "Total area of forests", "Forest area designated for strict protection"),
- c) information made available by the Directorate General of State Forests, representing the valuation of closing balances of selected bookkeeping accounts, needed for the valuation of intermediate consumption by the State Forests (Appendix No. 1, tab called "Accounting source data from the General Directorate of State Forests"),
- d) publicly available information produced by the Polish Central Statistical Office (PCSO), including, inter alia, valuation of gross domestic product and valuation of gross value added (Appendix 1, sheet titled "Data according to PCSO").

Twenty-three formulas were derived for the purpose of measuring the value of the impact of the would-be implementation of the Strategy. These formulas are listed and described in Appendix 2 of this Study.

Each stakeholder can become acquainted in detail with the methodology that was developed and applied to assess the value of the impact of the would-be implementation of the Strategy by reading Appendix No. 2, and in particular by analysing the data processing

formulas presented in the Appendix No. 1 (tabs titled “Trend Lines”, “Calculations I” and “Calculations II”).

3. Analysis of proposed definitions of primary forests and old-growth forests

As raised in the first study paper - the Strategy uses many terms that are defined in this document in a non-comprehensible manner or/and these terms deviate from definitions that have been commonly accepted so far. Such terms include the concept of primary forests and old-growth forests, which are natural resources to be covered by specific protection. It cannot be ruled out that this is most likely a case of “do-nothing” protection of the so-called primary forests and old-growth forests.

Nowadays, we are dealing with an exponentially growing process (an immaterial phenomenon) of redefining many important terms (changing the common and often legal definitions of them), e.g. such terms as primary forest or old-growth forest.

Comments relating to the definition of the primary forest concept

As described in detail in the first study, in Poland and the rest of Europe, primary forests are defined as forest complexes (or fragments of such complexes) that have developed since the dawn of postglacial primary succession:

- 1) as a result of natural processes, including natural disturbances
and
- 2) without cutting down trees in any manner:
 - a) as part of the management activities referring to these forests,
or
 - b) to change designation of land use
and
- c) without any other direct anthropogenic intervention beyond the inconsistent (from case to case) activity of indigenous population and local communities, which is an activity that relies on the traditional way of life of these communities, which is a style that is important for the conservation and sustainable use of biodiversity (that is, a style that actually serves the conservation and sustainable use of biodiversity) -

well, the primary forests defined in this manner in Poland and Europe may have survived completely in a residual form somewhere in inaccessible mountains, “swamps” and similar places.

Such a definition of the primary forest certainly does not apply to e.g. the economic part of the Białowieża Forest in Poland, which was discussed in detail in the First Study, as well as in other studies produced at that time in the State Forests. In these other studies it was shown, in particular, that already in the post-war period, the economic part of the Białowieża Forest in Poland was subject to forest management, and practically in each forest division the generational replacement of the forest was carried out with the application of a specific complex felling.

In the light of the First Study there are no contraindications (and even from the point of view of preservation of biodiversity for future unexplored human needs it is advisable) that in Poland the natural wealth represented by relict fragments of forests, which might still be preserved somewhere, should be covered (after their identification) with strict protection, which obviously cannot consist in “doing nothing”, because under current circumstances of external anthropological impact with “doing nothing” this wealth will simply disappear sooner rather than later.

Apart from the definition of primary forest discussed above - there are attempts to create a separate definition for Europe, according to which as primary forest should be considered every forest complex (or a part of a forest complex), which was:

- 1) was occupied by forest vegetation “at least during the historical period (e.g. for the last thousand years)”,
- 2) at that time, subject to natural disturbances (disruptions):
 - a) has not been used in a manner corresponding to today’s clear-cutting (“has not been completely cleared”),
including after “complete” clear-cutting
 - b) has not been temporarily converted into another land use
 - c) may have been subject to “traditional human disruptions” in the past, such as:
 - burning (implicit in the designation of these sites for the return of forest vegetation),
 - cutting of ‘beds’ (implicitly the clearing of strips, rows to make way for crops and spinneys on such sites)
 - d) may have recently been subject to selection cuts (implicitly care and pre-felling),
 - e) in burned areas and in areas of cut “beds” was covered by the “return” of forest vegetation through natural regeneration, although also through artificial regeneration (“planted tree stands”),
- 3) is occupied by forest vegetation sufficiently similar to “natural” vegetation.

Despite the fact an attempt was made to give the definition of primary forest pushed in Europe to be more logical and understandable (than it is presented in connection with the Strategy in source materials) - it still raises a lot of questions. It would seem that a factor disqualifying the possibility of classifying a given forest complex (or its fragment) as primary forest is the fact that this complex (or its fragment) has undergone generational replacement with the application of measures corresponding to today’s clear cutting, including the option of temporary use of the “cleared” area as a use other than forest land. Nothing could be further from the truth - according to the proposed definition, in Europe, primary forests could include other forests, including secondary forests (i.e. forests created from the reforestation of land, afforestation of land, and even from the restoration of clearcuts).

With such a “vague” and essentially open to arbitrary interpretation definition of primary forest in Europe, in practice, all forests (regardless of the age of the trees in the stand) could be considered primary forests, i.e. both forests under clear-felling or polycyclic harvesting systems, as well as continuously managed forests - as long as the forest vegetation corresponds to its “natural composition”.

Since the occurrence of so-called primary forests in Europe is associated with a specific way of their protection (called strict protection, whatever it means /see below/), the Republic of Poland should categorically demand not so much to unify (“to make clear”) the definition of these forests in Europe, but first of all to eliminate it altogether. It should be strongly emphasized that the so-called primary forests in Europe, and certainly in Poland, have been formed as a result of more than a century of correcting natural processes, including natural disturbances, with the use of forest management methods. As demonstrated in the First Study - there is now a global threat to the sustainability of natural ecosystems, including forest ecosystems. If creating a definition of primary forests for Europe is to serve their “liberation” from forest management in order to reinforce the current biodiversity in these forests for future human needs - then this is a “breakneck” concept. Under the conditions of forest areas fragmentation, increasing external anthropogenic impact connected with demographic explosion and

spreading of urbanized, industrialized and communication areas - cessation of multifunctional sustainable forest management in these forests (also in other forests which are currently commercial forests) will inevitably result in transformation of forest landscapes into devastated landscapes. Let us repeat the statements made in the first study - an alternative to forcing the actions announced in the Strategy is to develop and professionalize the concept of protective forests (the concept of creating forest farms with specific dominant functions).

Comments relating to the definition of the old-growth forest concept

As promoted in the source studies and consistent with the definitions of primary forests mentioned above - old-growth forests are stands of trees:

- 1) located within forest complexes (or within fragments of forest complexes) that are primary forests or that are secondary forests (implicitly, forests that are not primary forests according to the above definitions),
- 2) representing biocenoses associated in structure and species with those of old primary forests of the corresponding type,
- 3) having the ability to function as forest ecosystems independently of the ecosystemic influence of the stands of “younger age classes” located in these forest complexes (or in these fragments of forest complexes) - and this is due to the due “accumulation” of natural wealth in these stands.

Putting aside the question whether indeed we have adequate knowledge regarding the characteristics of primary biocenoses in general, including the characteristics of primary biocenoses corresponding to old-growth primary forests - it should be noted that the ecosystem functional independence of old-growth forests from the surrounding (directly or those functionally) stands of younger age categories **may in principle refer only to the forests**, which today we call continuously managed forests (only in such forests can there be trophic continuity independent of the components of trophic chains associated with the tree stands of younger age classes).

Although an effort has been made above to make the definition of old-growth forest clearer (relative to definitions cited in connection with the Strategy in the source materials) - it is still not clear and obvious. It seems that the Polish side should demand abandonment of works on refining this definition, if creating old-growth forests would serve their inactivation, i.e. in practice, sooner rather than later, lead to transformation into devastated landscapes.

Aiming to enhance (for future human needs) the biodiversity associated with old-growth forests, it is necessary, in the light of the arguments in the first paper, to maintain the impact of human activities on them by applying the methods of multifunctional sustainable forest management.

What is going on (or why conservation of biodiversity on Natura 2000 sites is no longer sufficient in the EU)

Until recently, there was an unquestionable conviction that the panacea for preserving and maintaining biological diversity for future human needs (for creating a bank of reproductive communities) was to separate (in addition to other area forms of nature protection) Natura 2000 areas, ultimately connected by a network of ecological corridors. There can be no doubt that, at least for the territory of Poland, the aforementioned Areas include the so-called primary forests and old-growth forests (in the meaning of these terms as discussed above). For individual Areas,

protection task plans are created, which determine what is to be protected and what actions or omissions are to serve this purpose.

And here, when the realization of the concept of Natura 2000 areas in Poland started to come to an end - there appeared a concept of restoring nature for human life, among other things, by changing the approach to human impact on the so-called primary forests and old-growth forests.

In this context, one should more and more courageously ask the question, which was partly already voiced in the First Study, whether in fact it is not about “conserving” natural wealth for the future needs of mankind, but about conserving and deepening the current deep differentiation of human prosperity in Europe and in the world under the slogan of the necessity of sacrifices on the part of countries rich in natural resources, allegedly in order for mankind to maintain the possibility of realizing sustainable development in the environment of unrestrained demographic explosion. Is this not, among other things, what the overwhelming process of redefinition of many terms, including the forcing of vague definitions of the so-called primary forests and old-growth forests is supposed to serve?

4. The effects of the Strategy implementation in numerical terms as a credible justification of the veracity of the theses provided for in Section 1

The effects of the possible implementation of the Strategy, determined in accordance with the assumptions and methodological solutions presented in Section 2. and in Appendices Nos. 1 and 2 to the smaller (second) study, are summarized in the framework of Table 1 below.

Table 1 Synthetic summary of the impact of Strategy implementation on the State Forests’ National Forest Holding

Financial Highlights	2022	2023	2024
Expected financial result (‘000 PLN)	525,000.00	530,000.00	540,000.00
Expected revenues from sales of wood in forest districts (‘000 PLN)	8,099,296.23	8,148,824.03	8,152,888.03
Expected forest tax valuation - ‘000 PLN	231,602.01	232,045.14	232,134.30
Expected cost of primary and secondary production (‘000 PLN)	4,142,932.35	4,194,230.43	4,184,965.46
Expected volume of wood to be sold by the State Forests - ‘000 m ³	41,921.42	42,203.26	42,246.48
Expected fuel supply - ‘000 m ³	3,031.16	3,069.58	3,056.82
Employment in forest service enterprises according to PCSO	30,000.00	30,000.00	30,000.00
The number of national economy enterprises purchasing wood from the State Forests	7,000.00	7,000.00	7,000.00
Predicted area of forests under the management of State Forests (ha)	7,330,297.56	7,334,820.53	7,339,343.51
Forest area to be under strict protection (ha)	900,000.00	1,800,000.00	2,700,000.00
ADJUSTED FINANCIAL RESULT OF STATE FORESTS - ‘000 PLN (determined based on the formula [2])	67 680.82	-383 531.18	-834 322.96
A DECLINE OF FINANCIAL RESULT - ‘000 PLN (determined on the basis of the formula [1])	457 319.18	913 531.18	1 374 322.96
Estimated number of individuals who may not find further employment at the State Forests (determined by formula [3])	3 683	7362	11036
ESTIMATED REDUCTION IN THE TIMBER VOLUME OFFERED FOR SALE BY THE STATE FORESTS - ‘000 m ³ (determined on the basis of the formula [4])	5 147	10 357	15 542

ESTIMATED NUMBER OF NATIONAL ECONOMIC ENTITIES ACQUIRING TREE RESOURCES IN THE STATE FORESTS THAT MAY DISCONTINUE THEIR MARKET ACTIVITIES (established on the basis of formula [5])	859	1 718	2 575
ESTIMATIVE REDUCTION IN FUEL SUPPLY - '000 m ³ (determined on the basis of the formula [6])	372	753	1 125
Estimated value of the contribution of State Forests to the formation of Net Domestic Product (without taking into account the effects of possible implementation of the Strategy) - '000 PLN			9 447 922.76
Estimated value of the State Forests contribution to the National Net Domestic Product (taking into account effects of possible implementation of the Strategy) - '000 PLN			1 517 180.44
DECLINE OF THE VALUE OF THE STATE FORESTS' CONTRIBUTION TO THE DEVELOPMENT OF NATIONAL NET PRODUCT, assuming that the Strategy has been implemented - '000 PLN			7 930 742.32
Estimated value of net operating surplus of the State Forests (without taking into account the impact of would-be implementation of the Strategy) - '000 PLN			5 681 834.74
Estimated value of net operating surplus of the State Forests (taking into account the impact of would-be implementation of the Strategy) - '000 PLN			-812 925.08
A DECLINE IN THE VALUATION OF THE NET OPERATING SURPLUS OF THE STATE FORESTS given that the Strategy has been implemented - '000 PLN			6 494 759.82
Funds, related to the Forest Fund, used to carry out the activities of the State Forests, not coming from the basic allowance (given that the Strategy has not been implemented) - '000 PLN			385 426.37
Funds, related to the Forest Fund, used for running the State Forests' activities, not coming from the basic write-off (given that the Strategy has been implemented) - '000 PLN			1 228 295.66

The above tabular summary indicates that if the Strategy has been implemented, it is expected that:

- 1) the State Forests, assuming they retain their organizational and legal form, including the current area of responsibilities, will become a permanently deficit entity,
- 2) the valuation of the projected net financial result of the State Forests will decrease in 2024 by approximately PLN 1.4 billion, as it will fall from a profit of PLN 0.54 billion to a loss of PLN -0.83 billion,
- 3) in 2024, the number of people employed in forest service companies will decrease by around 11,000, which means that one in three forest service company employees will be made redundant due to a lack of work frontage in the State Forests,
- 4) the supply of wood from the State Forests will decrease in 2024 by approx. 15 million m³, i.e. by approx. 36%, which may result in the bankruptcy of approx. 2.6 thousand out of approx. 7 thousand domestic entities currently relying on wood purchased from State Forests' organizational units,

- 5) the supply of fuel to the population will decrease in 2024 by approximately 1.1 million m³ against a projected level of (without the effects of possible implementation of the Strategy) approximately 3.1 million m³.

Implementation of the Strategy will have a very serious impact on shaping the valuation of the contribution of the State Forests to the creation of the Gross Domestic Product (GDP) and the Net National Product (NNP).

As it is known, the economic significance of a given entity for the national economy is determined by its reliably determined contribution to the formation of GDP and GNP. The measure of this contribution is the gross and net value added, which is obtained by subtracting from the valuation of the value of output produced by this entity the valuation of the consumption of external factors of production (external goods and services) excluding labour resources (intermediate consumption) and (for the purpose of net value added) the valuation of the depreciation of fixed assets.

In accordance with the EU Regulation on National Accounts (hereinafter referred to as the National Accounts Regulation), the output of a national economy entity consists of its market output (in the State Forests, mainly the production of wood raw material), output for own final use (in relation to entrepreneurs, this is the production of tangible and intangible fixed assets in-house, not excluding the production of intellectual assets in-house) and non-market output. As already indicated within the sector of institutional units grouping non-financial entrepreneurs, State Forests are a special entity of the national economy, as they produce a substantial non-market output. It consists of non-tangible products of forest management, being a result of fulfilment of non-productive functions of forest (environmental functions, environmental protection functions and social functions, related, among others, to public accessibility of forest) and a great number of activities replacing and supernormally supporting public administration (state and local government bodies and institutions) in fulfilment of its duties, both in dominant and imperial sphere.

The value of non-market output produced by State Forests is not currently valued in a formal way, despite the provisions of the National Accounts Regulation requiring it. According to the National Accounts Regulation, the value of State Forests' activities of substitution and supernormal support to public administration should be valued at the cost of these activities, while the value of non-tangible products resulting from the realization of non-productive forest functions. The value of non-tangible products resulting from the performance of non-productive functions of forest can be (according to the Regulation on national accounts) valued on the basis of a discounted stream of financial benefits "sacrificed" by the State Forests as a result of extending (or shortening) the age of generational replacement of stands in relation to the economically justified age, as well as as a result of excluding a certain area of forests from material production due to nature protection, or treating some fragments of forest as testing grounds - in both cases for the purposes of performance of non-productive functions of forest. There are many indications that the valuation of this value is many times higher than the valuation of the market production value of the State Forests. **Legal sanctioning, within the framework of the national legal order, of the obligation to take into account the valuation of the value of non-market production, produced by the State Forests, should be considered an undertaking of absolute priority.**

For the purposes of this (second) analytical study, an algorithm was developed to value gross value added and net value added as measures of the contribution of State Forests to

GDP and GNP - both under the assumption that the Strategy does not materialize and under the assumption that the Strategy materializes under the current scenario.

The valuation of the contribution of the State Forests to the Net Domestic Product (without taking into account the effects of possible implementation of the Strategy) was estimated for 2024 at ca. PLN 9.4 billion, which corresponds to approximately (9.4 - 0.4) PLN 9 billion of gross value added. According to the Polish Central Statistical Office (PCSO), the gross added value for the whole national economy oscillates around PLN 2,045,000,000, while employment is around 9,700,000 workers. This means that in the entire national economy, there is about PLN 211,000 of gross added value per one employee. If the estimated gross value added, relating to the State Forests, is divided by the total headcount at the State Forests (approx. 26,400 people), the amount of about PLN 340,000 is obtained, which reflects the valuation of the gross value added generated by the State Forests per one employee in the organization. **The data in the preceding sentence should be treated as definitive proof that the propagated thesis of overstaffing at the State Forests is false on its face.**

It should be expected that if the Strategy is implemented, the valuation of net added value generated by the State Forests will decline by as much as PLN 7.9 billion in 2024 (from PLN 9.4 billion it will fall down to PLN 1.5 billion). State Forests will become a marginal entity in terms of gross value added per employee in that entity.

In light of the National Accounts Ordinance - an important measure of an entity's significance to the national economy is the so-called net operating surplus. It represents the difference between the net value added associated with an entity and the wage costs and taxes paid by the entity, plus current subsidies extended to the entity.

If the Strategy is not implemented, the net operating surplus of the State Forests is estimated to be about PLN 5.7 billion in 2024. If the Strategy has been implemented, the expected net operating surplus of the State Forests will fall to approximately PLN -0.8 billion in 2024. The State Forests will become a financially inefficient entity, which is consistent with the earlier diagnosis that for 2024 the expected net financial result of the State Forests will also be negative, at a similar level of PLN -0.8 billion.

An important (original, unique, and by all means deserving to be maintained) element of the financial system of the State Forests is the Forest Fund. Cash, related to the forest fund, is derived from the so-called basic allowance (a cost borne by all forest districts), but is also derived from growing amounts in the Forest Fund bank account not related to the basic allowance.

Under the assumption that the Strategy is not implemented - the funds related to the forest fund, which, not coming from the basic provision, will "have to" be allocated in 2024 to finance the operation of the State Forests, were estimated to amount to approx. PLN 0.4 billion, while in the case of implementation of the Strategy - to PLN 1.2 billion.

For many years, the cash balance on bank accounts related to the Forest Fund has been around PLN 0.8 billion at the beginning of the year. During the year, the balance increases primarily due to:

- a) the aforementioned basic allowance, which involves forest districts incurring the costs of the basic allowance,

- b) a profit allowance for forest districts, corresponding to an assessment of the value of tasks which had been planned in the forest districts in the year preceding the year in question, but had not been carried out,
- c) income from the State Forests' holdings in the companies,
- d) additional statutory income boosting cash balances on bank accounts related to the Forest Fund.

As can be seen from the table above - in the case of implementation of the Strategy already from 2023 a negative financial result of the State Forests should be expected (no option to make profit write-offs). There is also no expectation of significant increases in the forest fund's bank account balance due to the State Forests' holdings in the companies. The so-called additional income of the Forest Fund is usually at most around PLN 200 million. If the Strategy has been implemented, the basic allowance is estimated to fall from a "customary" level of approximately PLN 1.1 billion to a level of approximately PLN 0.7 billion in 2024. All of this means that, if the Strategy has been implemented, a deficit in resources associated with the Forest Fund is to be expected, based on the following calculations:

opening cash balance in 2024 (optimistic calculation, since already in the years preceding 2024 there will be a need to "come down" from the opening cash balance of the entity)	PLN 0.8 bn
Basic write-down in 2024	PLN + 0.7 bn
Profit contribution of Forest Districts in 2024	PLN + 0.0 bn
Income from State Forests' holdings in the companies in 2024	PLN + 0.0 bn
The so-called other income of the Forest Fund in 2024	PLN + 0.2 bn
Total maximum balance of resources related to the Forest Fund available in 2024 including those representing Opening Balance (0.8+0.7+0.2)	PLN 1.7 bn
In 2024 the requirement for funds, related to the Forest Fund and not coming from the basic allowance	PLN 1.2 bn
Required balance of funds related to the Forest Fund available in 2024 (1.2+ 0.7)	PLN 1.9 bn
Shortage of funds related to the Forest Fund available in 2014 (1.7-1.9)	- PLN 0.2 bn

Thus, even after "the consumption" of all the funds related to the Forest Fund representing the Opening Balance, in 2014 there will be preventing all the needs to be financed. This (second) Study assumes that the shortage will be offset by an extraordinary replenishment of bank accounts related to the Forest Fund through a one-off replenishment of these accounts in 2024 from current accounts of the State Forests' organizational units. Such a solution (obviously requiring a change in the law) would obviously be a short-term solution. Realistically, therefore, already for the year 2024, the estimate of the contribution of State Forests to GDP and GNP and the estimate of the net operating surplus of the State Forests would have to be reduced by the amount representing the "inefficiency" of the Forest Fund.

To sum up, if the Strategy is implemented, the Forest Fund would become a completely dysfunctional component of the State Forests' financial system.

5. Conclusions

The theses, articulated in Section 1 of this Study, are in our opinion sufficiently substantiated (justified, proven) in its Section 4. In the first study it was shown that the implementation of the Strategy in relation to forest landscapes understood as an integrated set of forest ecosystems will not result in the restoration of forest nature to Man for his health and other benefits - now and in relation to future generations (rather the opposite).

It is certain that the implementation of the Strategy will contribute to:

- undermining, from the economic point of view, the sense of further functioning of the State Forests - an entity which, constituting an instrumental value difficult to overestimate, undoubtedly requires improvement in terms of particular systems of its functioning, but (it should be strongly emphasized) should not disappear from the economic map of Poland (including with the use of a procedure, tested nowadays in other areas, consisting in creating anew the "world" of definitions of various notions). The implementation of the Strategy will have negative effects far beyond those affecting State Forests;
- disintegration of the forest-wood chain;
- unemployment (even about 100,000 people);
- the collapse of many forest service companies (estimated collapse of 30% of forest service companies) and businesses based on wood raw material;
- a drastic reduction in the supply of wood, including fuel to the rural area population;
- commercialization of the availability of forests for leisure, tourism and mushroom and berry picking.

All these consequences of the Strategy implementation will result in social discontent, associated with the deterioration of the living conditions of millions of citizens, which will not be offset by unspecified and rather phantasmagorical potential income generated by tourism and leisure.

We believe that there is an alternative option to the Strategy. This alternative option is the concept of forest farms, for which the Forest Carbon Farms are a prototype. In our opinion this alternative concept should be developed in the third Study by the Trade Union's experts.

In our opinion, this study represents a value in itself, as it solves from the methodological perspective, the issue of an algorithm for valuation of value added generated by the State Forests and valuation of the State Forests' operating surplus. In our opinion, these valuations should be a component of annual financial statements and business reports of the State Forests National Forest Holding.