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THE SIZE AND UTILIZATION OF THE AGRITOURISTIC ACCOMMODATION BASE IN THE COMMUNITIES INCLUDING AREAS OF BIAŁOWIEŻA NATIONAL PARK AND BIEBRZA NATIONAL PARK

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ABSTRACT: The aim of the study was to determine the size of agritouristic accommodation base as well as its utilization in agritouristic farms located in communities with lands belonging to Białowieża National Park and Biebrza National Park. The study was conducted in 2010 and 2011 in 52 agritouristic farms (27 farms – Białowieża National Park, 25 farms – Biebrza National Park). The source data were collected via direct interview technique. The questionnaire form sent to the farms owners was used as the research tool. The data obtained in the study allow us to conclude that the accommodation base utilization indicator in analyzed farms was highly differentiated and was in communities of Białowieża National Park in the range between 1,64%-27,40%, and in communities of Biebrza National Park between -0,68%-40,55%. The average value of this indicator in both analyzed regions was similar and amounted to 8,1% in Białowieża National Park, 8,9% in Biebrza National Park. The real participation of accommodation places in analyzed market – „market penetration” – in more than a half of farms was negative. The percentage of farms with negative value of this indicator was the same in both analyzed regions and amounted to 56%.

KEY WORDS: agritouristic farm; accommodation utilization indicator; market share; fair share, market penetration

Introduction

Tourism constitutes an important function in the operation of national parks and other protected areas. They are characterised by unique natural and cultural values as well as atmospheric and biosphere conditions beneficial for humans. According to Adamowicz and Jaśkowska, (2007, p. 13), these conditions evoke growing interest in people living in towns to rest in environmentally valuable areas. Zaręba (2008, p. 11) states that the World Tourism Organization has been noting a growing global demand for tourism forms practised in environmentally valuable areas. Also other authors (Zehrer, Siller, 2007, p. 41) mention that visits to such places are increasingly popular, which corresponds to trends in present-day tourism.

Large tourist traffic in Białowieża National Park and Biebrza National Park which stimulates local tourist services is the reason behind investigating the accommodation facilities in this area to determine the extent to which they are used.

An overview of literature

According to Panasiuk (2015, p.182), environmentally valuable areas should be made available to tourism traffic aimed at education, learning and recreation, but only in a way that allows to fulfil nature protection functions and thus contribute to preserve these areas for future generations. Fulfilment of these functions is possible through the development of sustainable tourism which, in line with the assumptions of the Commission of the European Communities (COM/2003/716/final), should constitute profitable tourism in economic and social terms but also friendly to the environment and local culture.

Sustainable development of environmentally valuable areas depends to a large extent on adequate directions in the development of tourism, says Bołtromiuk (2011, p. 245). The author highlights the fact that many threats come from complete dependence on the tourism market. The development of sustainable rural tourism should not lead to creation of new tourist spots and deterioration of agriculture, but must be closely related to the values of village life which include life on a farm. This view is also shared by Jalinik (2015, p. 192) Sikora (2010, p. 177) and Sikorska-Wolak (2006, p. 80). These authors consider agritourism and eco-agritourism as the best forms of tourism to meet the requirements for organisation and practice of tourism on environmentally valuable and legally protected areas.

Environmentally protected areas can be found in every region of Poland, however their significance and rank vary greatly. A special place among these

areas is occupied by Białowieża National Park and Biebrza National Park. The unique nature landscape of both parks is legally protected and this limits the management of their resources. However, owners of farms that operate in the communes located in the areas included in Białowieża National Park and Biebrza National Park benefit from the opportunity of dynamic development of tourism in these parks. According to the *Statistic report on tourism traffic in Podlaskie voivodeship in 2010* (www.podlaskieit.pl), Białowieża National Park was visited by 255,165 people from Poland and abroad, while the Biebrza River Valley received 32,630 visitors. Local farmers use rather high tourist turnout to their advantage. They establish agritourism farms and create tourist products based on environmental and cultural values of the area as well as the farm's resources and their own ideas.

The above-mentioned statistic data might suggest that organisers of agritourism in Białowieża National Park might be in higher demand for their services. However, one needs to take account of the fact that people who visit the park, according to information obtained from Białowieża National Park tourist information point and agritourist farms, are mostly field trip guests (visiting for one day) and individual tourists who take short weekend breaks to visit the area. Moreover, the area of Białowieża National Park, in comparison to Biebrza National Park has more accommodation facilities like hotels, inns or private lodging. Therefore, agritourist farms located in both areas can have a comparable demand for their services.

Research methods

Research was conducted in agritourist farms operating in communes located in the areas which belong to Białowieża National Park and Biebrza National Park.

The choice of the region was purposeful. The list of farms and their location was obtained from Podlasie Agricultural Advisory Centre in Szepietowo. According to data obtained, in 2010 there were 112 active farms operating on the investigated area, including: Białowieża National Park (communes: Białowieża, Narewka) – 39 farms; Biebrza National Park (communes: Bargłów Kościelny, Dąbrowa Białostocka, Goniądz, Grajewo, Jaświły, Jedwabne, Lipsk, Nowy Dwór, Radziłów, Rajgród, Suchowola, Sztabin, Trzcianne, Wizna) – 73 farms.

Research was conducted in 2010 and complemented in 2011, while information obtained referred to 2010. The source material was obtained by direct interview method. The research tool was a questionnaire directed to the owners of the farms. A request for an interview was sent to all agritourist

farm owners located in the subject area. However, in the communes located in areas which belong to Białowieża National Park 27 owners agreed to answer questions from the questionnaire, and in communes located on areas which belong to Biebrza National Park – 25 owners.

The questions in the questionnaire referred to the number of guest rooms, number of beds, number of sold beds in 2010, accommodation standard, type of gastronomic services offered and recreational base amenities.

Based on the data obtained, the following indicators were calculated:

1. Indicator of accommodation utilization rate – calculated as percentage ratio of the number of beds sold in a given farm in 2010 to the service capacity of this farm in that year (number of beds x 365 days).
2. Share ratios of single farms in a given market were calculated based on mathematical formula from Kuniszyk (2007, p. 5) paper:
 - potential market share – “fair share” – the percentage ratio of the number of beds in a given farm to the number of beds in all investigated farms located in a given area;
 - market share – the percentage ratio of the number of beds sold in a given farm to the number of beds sold in all investigated farms located in a given area;
 - actual market share – “market penetration” – the difference between the value of “market share” and “fair share” indicators.

Results of the research

The size and utilisation of accommodation in communes included in Białowieża National Park

Data obtained for the paper (table 1 and 2) indicate that accommodation facilities in all farms investigated which are located in communes included in Białowieża National Park does not exceed 5 rooms. It should be noted that analysed accommodation met requirements regarding organisation of tourist stay in agritourist farms. Subject-matter literature points to the fact that accommodation in agritourist farms should be provided on a small scale as it is to satisfy requirements for a cosy and intimate lodging and homely atmosphere (Marks and Marke, 2002, p. 12). Moreover, the scale of agritourist activity corresponds with legal requirements which do not burden owners too much whereas its expansion results in more complex taxation and administrative responsibilities (Kobyłecki, Plichta, 2006, p. 29).

The respondent service providers provided not fewer than 2 rooms at guests' disposal. Most often, 5 rooms were offered (40.7%) and the number

of farms offering 2 or 4 rooms was nearly twice lower (22.2%) (table 2). Only 4 farms provided 3 rooms available for guests. Data acquired are similar to those acquired by Ciepiela et al. (2007, p. 196) and Ciepiela et al. (2009, p. 123), carried out in north-eastern Masovia and Siedlce region and results obtained in north-eastern Masovia and Siedlce region and research authored by Majewski (2011, p. 146), conducted in the vicinity of Narew National Park. The greatest number of farms (22.2%) offered eight beds (table 2). Farms with five, six or twelve beds ranked second (each one constituted 14.8%). All respondents provided services all year round, however the majority of guests were received in the tourist season (from June to September).

The demand for agritourist services is measured by the value of the agritourist farm accommodation utilisation ratio. Research by Wiatrak (2003, p. 9) says that demand for agritourist farms despite their dynamic development and promotion is of little interest for tourists. The average utilisation of accommodation in Poland in 2000 was 20.3% and has been falling ever since.

In investigated farms located in Białowieża and Narewka communes, the annual utilisation of accommodation in agritourist farms was diverse and ranged from 1.64% to 27.40% (table 1). Accommodation base utilisation was higher on farms which offered full board and a higher accommodation standard (rooms with en suite bathrooms). The percentage of farms offering full board was 48.1% (G₃, G₄, G₅, G₉, G₁₀, G₁₅, G₁₆, G₁₇, G₁₈, G₂₀, G₂₃, G₂₄, G₂₆), and rooms with en suite bathrooms were provided by 40.7% respondents (G₃, G₅, G₁₀, G₁₁, G₁₅, G₁₆, G₁₇, G₁₈, G₂₀, G₂₃, G₂₆). Breakfast and dinner were provided on one farm (3.7%) and the remaining farms offered self-catering rooms with no meals provided (G₁, G₂, G₆, G₇, G₈, G₁₂, G₁₃, G₁₄, G₁₉, G₂₁, G₂₂, G₂₅, G₂₇), which, the respondents explained, was due to too demanding sanitary and hygienic requirements. Recreational base amenities on the farm had no effect on demand for accommodation because they were neither varied nor numerous. The amenities mainly included: a fire pit or dedicated barbecue area (100% farms), a garden gazebo with furniture (88.9%) a playground for children (74.1%) and bicycles (92.6%). The lowest accommodation utilisation was noted for 4 farms (14.8%) offering self-catering rooms with a bathroom which the guests shared with the farm owner and his family (G₁₂, G₁₃, G₂₁, G₂₂).

Lack of research in subject-matter literature on the scope of utilisation of agritourist accommodation prevents thorough discussion of this subject. However, when we refer data obtained in the survey to the ones given for agritourist accommodation in Poland in 2010 (Notatka informacyjna GUS) where the utilisation ratio for beds was 15%, it can be stated that in 88.9% of investigated farms this ratio was lower. A similar value of this ratio (15.1%) was obtained in the Małopolskie voivodeship. On the other hand, the utilisation of beds in Warmia and Masuria was 10% (GUS). It should be noted that

Table 1. The size and utilisation of accommodation facilities in investigated farms (Białowieża National Park – BNP)

Number of a farm	Number of bedrooms	Number of beds	Service capacity [during the year]	Number of beds sold [during the year]	Accommodation utilization indicator [%]
G1	3	6	2190	120	5,48
G2	3	9	3285	180	5,48
G3	4	8	2920	311	10,65
G4	5	10	3650	243	6,66
G5	4	10	3650	482	13,21
G6	5	8	2920	138	4,73
G7	5	8	2920	150	5,14
G8	5	12	4380	220	5,02
G9	5	15	5475	480	8,77
G10	5	12	4380	540	12,33
G11	5	15	5475	487	8,89
G12	2	5	1825	30	1,64
G13	5	15	5475	100	1,83
G14	4	8	2920	150	5,14
G15	3	6	2190	600	27,40
G16	2	6	2190	438	20,00
G17	3	7	2555	320	12,52
G18	2	6	2190	211	9,63
G19	5	12	4380	268	6,12
G20	4	8	2920	300	10,27
G21	2	5	1825	40	2,19
G22	5	14	5110	200	3,91
G23	4	4	1460	150	10,27
G24	5	8	2920	206	7,05
G25	2	7	2555	150	5,87
G26	2	5	1825	350	19,18
G27	4	12	4380	217	4,95
Sum	103	241	87965	7081	–
Mean	3,8	8,9	3 258,0	262,3	8,1

Table 2. Farm structure by number of guest rooms and beds

Specification	Białowieża National Park		Biebrza National Park		Study area		
	Farms [%]	Number of farms	Farms [%]	Number of farms	Farms [%]	Number of farms	
Number of bedrooms	2	6	22,2	4	16,0	10	19,2
	3	4	14,8	5	20,0	9	17,3
	4	6	22,2	7	28,0	13	25,0
	5	11	40,7	9	36,0	20	38,5
	Total	27	100,0	25	100,0	52	100,0
Number of beds	4	1	3,7	1	4,0	2	3,8
	5	4	14,8	0	0,0	4	7,7
	6	4	14,8	2	8,0	6	11,5
	7	1	3,7	1	4,0	2	3,8
	8	6	22,2	7	28,0	13	25,0
	9	1	3,7	1	4,0	2	3,8
	10	2	7,4	5	20,0	7	13,5
	11	0	0,0	1	4,0	1	1,9
	12	4	14,8	2	8,0	6	11,5
	13	0	0,0	1	4,0	1	1,9
	14	1	3,7	2	8,0	3	5,8
	15	2	7,4	1	4,0	3	5,8
	17	1	3,7	1	4,0	2	3,8
Total	27	100,0	25	100,0	52	100,0	

in 18 farms investigated (66.7%) the beds utilisation ratio was below 10%, and in two farms it amounted to 20% and 27.4%. The average value of this ratio amounted to 8.1% (table 1 and figure 1) and was higher than the average obtained in agritourist farms in central-eastern Poland (Ciepiela et al. 2013, p. 93) and farms located in the Bug River region (Ciepiela, Sosnowski, 2011, p. 134). In comparison, the ratio of beds utilisation in collective accommodation establishments in Podlasie voivodeship in 2010 reached on average 29.4% (GUS).

The size and utilisation of accommodation in communes included in Biebrza National Park

Analysis of the size and utilisation of beds in investigated agritourist farms operating in communes included in Biebrza National Park revealed that just like farms in Białowieża and Narewka communes, accommodation facilities did not exceed 5 rooms and the percentage of farms with 5 rooms was the largest and amounted to 36% (table 2). 28% respondents offered 4 guest rooms. Fewer farms had 3 and 2 rooms to offer as accommodation (20% and 16% respectively). Researched agritourist operators offered from 4 to 17 beds. The majority of them (52%) had 10 and more guest beds and 28% had 8 beds available (table 2). Tourists were most likely to visit agritourist farms in months from May to September and the highest turnout was noted in July and August.

The factor of beds utilisation in 2010 ranged from 0.68% to 40.55%. In 16 farms, it was below 10%, in 13 of which it was lower than 6% (table 3 and figure 1). The value of this indicator was affected by services offered to tourists. Full board, offered by 14 respondents (56%), was the service which was the most popular with tourists ($G_1, G_3, G_6, G_7, G_{11}, G_{13}, G_{14}, G_{15}, G_{16}, G_{17}, G_{18}, G_{22}, G_{24}, G_{25}$). Seven farms (28%) offered self-catering guest rooms ($G_2, G_4, G_5, G_9, G_{10}, G_{20}, G_{23}$) and the remaining farms provided breakfast or dinner ($G_8, G_{12}, G_{19}, G_{21}$). Farms whose rooms had en suite bathrooms (3 farms – 12%) were more frequently chosen by tourists (G_6, G_7, G_{22}). Moreover, the demand for agritourist services was markedly affected by recreational base amenities and recreational services. A higher accommodation utilisation indicator was obtained for farms equipped with a garden pool (G_6, G_{17}, G_{25}), as well as for farms which offered horseback riding and organized canoe trip. There were eight farms (32%) offering a leisure activity of horseback riding. Of these, two farms provided both horse riding instruction and tours (G_7, G_{22}), and six farms provided horse riding tours only ($G_1, G_3, G_{13}, G_{14}, G_{16}, G_{18}$). Canoe trip were organized in eleven farms (44%) ($G_6, G_8, G_{11}, G_{12}, G_{13}, G_{15}, G_{17}, G_{19}, G_{21}, G_{24}, G_{25}$). The lowest accommodation utilisation was found for farms offering only rooms with a bathroom which the guests shared with the farm owner and his family. They constituted 28% of all the farms studied ($G_2, G_4, G_5, G_9, G_{10}, G_{20}, G_{23}$). Moreover, the farms had very modest recreational base amenities, and offered self-catering rooms and no recreational services.

Table 3. The size and utilisation of accommodation facilities in investigated farms (Biebrza National Park – BbNP)

Number of a farm	Number of bedrooms	Number of beds	Service capacity [during the year]	Number of beds sold [during the year]	Accommodation utilization indicator [%]
G1	5	8	2920	392	13,42
G2	3	8	2920	100	3,42
G3	3	8	2920	305	10,45
G4	5	17	6205	168	2,71
G5	5	12	4380	168	3,84
G6	4	7	2555	489	19,14
G7	2	9	3285	720	21,92
G8	5	13	4745	234	4,93
G9	3	10	3650	140	3,84
G10	2	4	1460	10	0,68
G11	4	8	2920	195	6,68
G12	4	8	2920	133	4,55
G13	3	10	3650	356	9,75
G14	4	8	2920	265	9,08
G15	4	8	2920	150	5,14
G16	4	10	3650	600	16,44
G17	4	10	3650	610	16,71
G18	5	12	4380	500	11,42
G19	3	11	4015	168	4,18
G20	2	6	2190	50	2,28
G21	5	14	5110	294	5,75
G22	2	6	2190	888	40,55
G23	5	15	5475	200	3,65
G24	5	14	5110	280	5,48
G25	5	10	3650	615	16,85
Sum	96	246	89790	8030	-
Mean	3,8	9,8	3 592,0	321,2	8,9

Indicators demonstrating positioning of surveyed agritourist farms in a given market

The values of ratios included in tables 4 and 5 allow to measure activity of a given farm in comparison to its competition. The data shows that both investigated areas had farms which deserve to be called “leaders” (G_{15} – Białowieża National Park and G_{22} – Biebrza National Park). This means that the value of the market share in these farms was significantly higher than the value of the fair share. It needs to be observed, however, that market penetration in many farms was negative. The percentage of such farms in both investigated areas was equal and amounted 56%. This may mean that services were inappropriately conducted in these farms or that the size of accommodation facilities was overestimated in a given area in relation to the demand for this type of tourism or that there was insufficient promotion of these farms or some communes (Ciepiela, Sosnowski, 2012, p. 131). However, taking account of the ratios studies for all farms located in a given area, it may be noticed that the market penetration factor for Biebrza National Park was positive and amounted to 2.6% (figure 1), while for Białowieża National Park it was negative (-2.6%). This means that the percentage share of beds sold in every farm analysed from Biebrza National Park area was higher given the entire number of beds sold in all analysed farms (from both areas of research – Białowieża National Park and Biebrza National Park) than the share of total places available in these farms.

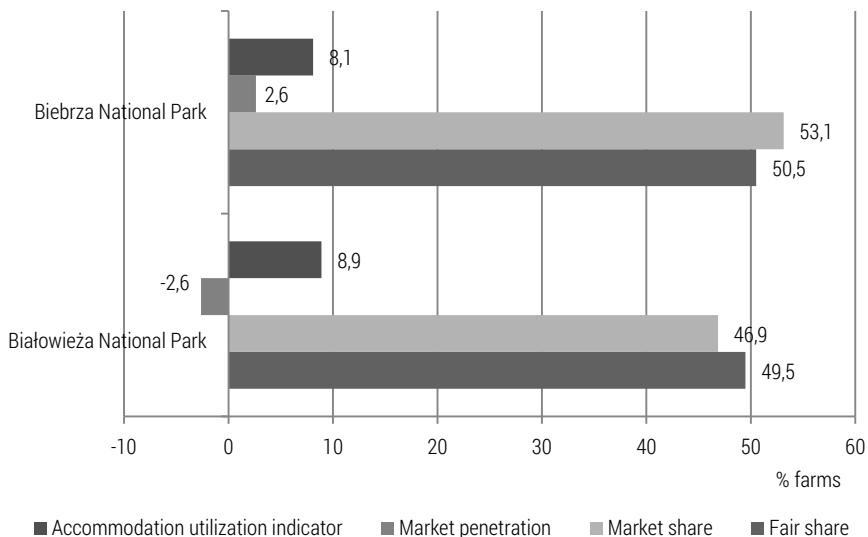


Figure 1. Indicator of accommodation facilities utilisation and indicators of potential and actual share of accommodation places included in each farm from a given area on the investigated market

Table 4. Indicators of potential and actual share of beds offered by each farm on the investigated market (Białowieża National Park – BNP)

Number of a farm	Fair share [%]	Market share [%]	Market penetration [%]
G1	2,49	1,69	-0,80
G2	3,73	2,54	-1,19
G3	3,32	4,39	1,07
G4	4,15	3,43	-0,72
G5	4,15	6,81	2,66
G6	3,32	1,95	-1,37
G7	3,32	2,12	-1,20
G8	4,98	3,11	-1,87
G9	6,22	6,78	0,56
G10	4,98	7,63	2,65
G11	6,22	6,88	0,66
G12	2,07	0,42	-1,65
G13	6,22	1,41	-4,81
G14	3,32	2,12	-1,20
G15	2,49	8,47	5,98
G16	2,49	6,19	3,70
G17	2,90	4,52	1,62
G18	2,49	2,98	0,49
G19	4,98	3,78	-1,20
G20	3,32	4,24	0,92
G21	2,07	0,56	-1,51
G22	5,81	2,82	-2,99
G23	1,66	2,12	0,46
G24	3,32	2,91	-0,41
G25	2,90	2,12	-0,78
G26	2,07	4,94	2,87
G27	4,98	3,06	-1,92

Table 5. Indicators of potential and actual share of beds offered by each farm on the investigated market (Biebrza National Park – BbNP)

Number of farms	Fair share [%]	Market share [%]	Market penetration [%]
G1	3,25	4,88	1,63
G2	3,25	1,25	-2,00
G3	3,25	3,80	0,55
G4	6,91	2,09	-4,82
G5	4,88	2,09	-2,79
G6	2,85	6,09	3,24
G7	3,66	8,97	5,31
G8	5,28	2,91	-2,37
G9	4,07	1,74	-2,33
G10	1,63	0,12	-1,51
G11	3,25	2,43	-0,82
G12	3,25	1,66	-1,59
G13	4,07	4,43	0,36
G14	3,25	3,30	0,05
G15	3,25	1,87	-1,38
G16	4,07	7,47	3,40
G17	4,07	7,60	3,53
G18	4,88	6,23	1,35
G19	4,47	2,09	-2,38
G20	2,44	0,62	-1,82
G21	5,69	3,66	-2,03
G22	2,44	11,06	8,62
G23	6,10	2,49	-3,61
G24	5,69	3,49	-2,20
G25	4,07	7,66	3,59

Conclusion

Research carried out revealed that in communes with areas included in Białowieża National Park (Białowieża and Narewka) the number of agritourist farms in 2010 amounted to 39. At the same time, within the area of Biebrza National Park there were 73 agritourist farms located in 14 communes. This suggests significant density of agritourist accommodation in communes from Białowieża National Park and a large dispersion of the ones based in areas of Biebrza National Park.

The number of accommodation beds in agritourist farms was small as it did not exceed 5 rooms in any farm and the average number of accommodation places (per farm) ranged 8.93 – for Białowieża National Park and 9.84 – for Biebrza National Park. Results obtained from the research allow to conclude that owners of surveyed farms operated in line with legal regulations for agritourist farms and followed rules adopted for organising sustainable tourism on environmentally valuable areas.

Agritourism in a given area in comparison to other regions of Poland enjoys rather significant interest of tourists though demand on tourist services in investigated farms was very diverse. The level of accommodation beds utilised in farms located in Białowieża and Narewka communes ranked from 1.64%–27.40% and was on average 8.1%. Significantly higher fluctuation of this ratio (from 0.68% to 40.55%) was observed in the farms from Biebrza National Park, however its average value (for a farm) was similar and amounted to 8.9%. A higher accommodation utilisation indicator was obtained for farms which offered full board and rooms with en suite bathrooms, in both the study areas. What is more, the values of this indicator calculated for farms situated in Biebrza National Park was affected by farm recreational basis amenities and type of offered recreational services. The demand for services offered was markedly higher for farms equipped with a garden pool and for farms offering recreational horseback riding and organized canoe trip. It has to be noted that tourist traffic in both parks was of seasonal character culminating in months from May to September with significant drops in autumn and large falls in winter period.

Positioning indicators for each agritourism farm in the analysed market reveal that market penetration was very diverse. The percentage of farms where positive value of this indicator was noted was equal on both areas investigated and amounted to 44%. In the remaining farms, the value of market penetration was negative. This means that the percentage ratio of beds sold in these farms to the number of places sold in all investigated farms (market share) was lower than the percentage ratio of accommodation beds available in these farms to their total number (fair share). It indicates that the

services on these farms were offered in an inappropriate manner as the farms only provided often accommodation and their accommodation base was of low standard. Moreover, such a situation may have also resulted from overestimation of accommodation base size in a given area in relation to the demand for this type of tourism, and insufficient promotional activities of these farms or communes in which the farms are situated.

The contribution of the authors

Grażyna Anna Ciepiera, Prof. – 40%

Monika Kur-Kowalska, PhD – 30%

Jolanta Jankowska, Prof. – 30%

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