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MEASURING THE LOCAL LINKAGES OF FARM HOUSEHOLDS (SPATIAL TRACKING APPROACH) IN NORTH EAST SCOTLAND (UK) AND PODLASKIE (POLAND)

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Abstract. In the paper findings from an analysis of the direct transactions associated with a sample of farm households drawn from two European case study areas – Podlaskie, Poland and North East Scotland, UK were presented. The results indicated that the concept of "local" in relation to farm household transactions depends on the economic background of the area under analysis. While farms in the Polish CSA region carried out almost all of their farm-related transactions very close to the location of the farm, farms in the North East Scotland had more complex and generally less local transactions reflecting spatial concentration in the upstream and downstream businesses in the respective areas.

Key words: farm households, local concentration, local economy

INTRODUCTION

Farm households have several economic and social relations with a range of different actors in the economy. From the economic point of view the local economy can be compared to a bucket the local community would like keep full, but every time when someone buys something sourced from outside the local economy, the money leaks out [Pretty 1999]. Each time when raw materials are exported outside the local economy, then value is added somewhere else. Considering that one of the main players in the local economy in rural areas is agriculture there is a research question to what extent farm households are

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integrated in their local economies, and what is the role of the CAP in maintaining and/or influencing these linkages. European agricultural policy has always been in part justified on the grounds that, by supporting agriculture, the CAP is also supporting the local economies in which farms are situated, thus contributing to the rural development in general. The most well recognized (traditional) linkages associated with agricultural production relate to buying inputs, using local labour and the supply of output downstream. Others are associated with non-agricultural production activities (such as farm tourism), as well as with farm household expenditure and off-farm work. While rural sociology has a substantial literature on farm households and local economic development, much of it stemming from Goldschmidt's hypothesis on the socially detrimental effects of large scale farms and industrial agriculture [Goldschmidt 1978; Hoggart 1987; Lobao and Stofferahn 2008], there is very limited economic analysis of the extent to which farm households contribute to local economic development or the factors which influence the strength of local economic integration. Theory suggests that farm purchasing and output sales patterns are influenced by farm and farmer characteristics. It suggests, amongst other things, that larger farms will be more likely to bypass local input suppliers to take advantages of economies of scale. They are also more likely to bypass local marketing outlets and supply large-scale buyers. Farmer characteristics thought to influence purchasing and sales patterns are age, education and experience. Similarly, a number of different internal influences on farm households' regarding diversification and off-farm work, including size of holding, farm type, land quality, the age and number of family members, the stage in the family life cycle and educational background However all of these, and the effects influencing input purchasing and output sales, will be mediated by the economic structure and geographical characteristics of the local economy. Therefore how that local economy is defined is of vital importance to the spatial tracking analysis.

The nature of the relationship between farm households and their localities varies significantly across Europe in the result of historic economic, societal and policy developments. Economic development in agricultural sector and thus farms evolution is dependent on two groups of factors [Tomczak 2005]:

– external – such as general level of country's development, share of agriculture in GDP's creation, possibilities of non agricultural employment, demand for agricultural products and trade development;
– internal factors – such as work efficiency in agriculture, total employment in agriculture, scale of production, level of farm income per hectare, number and structure of farms, equipment and balanced relations between factors of production. Those determinants by affecting on-farms developments have an influence on linkages in local economy as well.

In order to analyze differences in contributions of farm households to local economies two European case study areas were examined as a part of the CAP-IRE project[1]: North East Scotland (UK) and Podlaskie (Poland). The case study areas contrast strongly in terms of the characteristics and importance of the farm sectors in each area.

[1] The analysis presented in the paper is based on the study that has been conducted in the framework of the 7th EU Framework Programme project CAP-IRE ('Assessing the multiple Impacts of the Common Agricultural Policies (CAP) on Rural Economies').

A survey of around 240 farm households in each study area was conducted providing detailed information on the first round economic transactions of farm households, including spatial aspects, so that the degree of locality of transactions could be assessed.

METHODOLOGY

Building on the findings from Survey A of the CAP-IRE project [Raggi et al. 2010] and an additional spatial tracking survey the spatial pattern of direct links between farm households and other economic agents (input suppliers, purchasers of farm output, off farm work) was analyzed (spatial tracking analysis) to assess the nature and strength of local linkages. This explores, amongst other things whether there are systematic differences in the degree of local integration by regions. The purpose of the spatial tracking analysis is to provide some understanding of the extent to which farm households are integrated into their immediate surrounding economy. The aim is to ascertain whether there are systematic differences in the patterns of direct linkages by farm, farmer and farm household characteristics, how these vary according to local context. Although the focus in this case is on first stage linkages only, the literature confirms that direct linkages are by far the most important in terms of economic integration of a business or sector [Miller and Blair 2009]. Further, the analysis will indicate the extent to which income and employment effects associated with farm households are retained within a particular locality.

Several different approaches have been taken to define "local" in the context of first stage economic linkages. For example, Chism and Levins [1994] define local on the basis of a set distance from a particular town while other authors have used administrative boundaries to define what are recorded as local or non-local transactions [Lambert et al. 2009]. It is worth to note, that administrative boundaries and functional boundaries (such as travel to work areas or retail market areas) usually have little or no correspondence with one another, while simple distance based measures of locality ignore the structural characteristics of the region. For example, a farmer may buy fertilizer from the local supplier but that supplier may be based in a different administrative area and/or may be quite some distance from the farm simply due to market concentration or geographic barriers.

The paper follows the USDA convention used in their analysis of ARMS data and adopts a context-specific as opposed to absolute definition of "local" [USDA 2008]. In particular, rather than defining local in terms of either a fixed distance or according to an administrative boundary, transactions are considered relative to the distance between each individual farm and its nearest conurbation. If the transaction takes place within the reach of the nearest settlement it is classified as local, if it takes place at a distance further than the nearest settlement, it is classified as non local.

The Spatial Tracking Survey was conducted in two case study areas with the use of questionnaire in which nine sections covered the following areas preliminary information: individual/household characteristics; holding details; output; on-farm diversification; labour; inputs; off farm work; open questions. The questions were primarily closed questions with an exception of the final section.

DESCRIPTION OF CASE STUDY AREAS

The Podlaskie region is located in the North-Eastern part of the country. It comprises 6.5% of Poland's area. Sixty percent of the population live in urban areas in the region, the remaining 40% in rural areas. Agriculture accounts for 10.7% of GRDP and is one of the region's main industries. GDP per capita for the year 2002 is only 77% of the national average. The 'drivers' of the region's development are urban centres (Bialystok, Lomza, Suwałki) surrounded by much less advanced areas. Bialystok, the only city with a population of more than 291 thousand accounts for nearly 37% of the region's economic potential and 45.8% of the employment in Podlaskie [Zioło and Ślęzak 2003, p. 188].

More than half the land area is utilised for agriculture. Natural conditions for farming are diversified across the region mainly in terms of soil quality ranging from poor, sandy soils, frequently threatened by droughts, to very good, heavy soils suitable for all types of agricultural production.

Family farms dominate in the region. Average farm size (11.5 ha) is relatively high for Poland, and has been increasing noticeably recently. Farmers in the region are quite dynamic and milk production has developed very strongly. There are 3 main dairies in the region which belong to the group of the most important milk processors in Poland.

The North East of Scotland Case Study Area (NUTS 3 area UKM50) comprises the two unitary authorities of Aberdeen City and Aberdeenshire. Nearly half the region's 450,000 population lives in the region's one city, Aberdeen (GROS, revised 2007). The region is economically buoyant, driven by activity within the Oil & Gas sector, with annual rates of growth of around 2.4% per annum and the third highest Gross Value Added in the UK.

Historically the CSA is an important agricultural region, that has had an international impact (for example, it is the home of the Aberdeen Angus cattle breed and seed potatoes are exported globally). The majority of farms are owner occupied and family run. In line with national and international trends, the number of farms and employment within agriculture has declined significantly. Part-time employment and part-time farms however have increased in significance. Farms are larger than in Podlaskie (99.7 ha on average) and belong predominantly to the mixed type. Beef production remains important, with 1217 farms raising and breeding 58,529 beef cows. In sharp contrast to Podlaskie (PL), only 100 farms are involved in dairy production and there is only one major dairy in the region. Cereal production in the area has supported an important pig and poultry industry and helps supply Scotland's very significant whisky industry with malting barley. Although food and drink production remains an important sector in some rural areas, concentration and consolidation of activity in the industries up-stream and down-stream of agriculture the input supply and product-processing industries – has reduced the local economic importance of agriculture.

FARM CHARACTERISTICS

The distribution of farms across farm types in both of the CSAs is consistent with background information on agriculture in each region. In particular, dairy farms pre-

dominate in the Podlaskie sample, cattle farms in North East Scotland (Table 1). There are very few pig and poultry farms in the UK reflecting the degree of specialism in this sector. Similarly there were only three dairy farms included in the North East Scotland sample. As a consequence, results for these categories of farm types are suppressed in subsequent tables as they may not be representative. Table 1 above shows the mean farm sizes by farm type for both CSA. The data reported is farmed area and thus includes land rented in as well as owned land, after having allowed for any area rented out to other users.

It is clear that the Polaskie CSA has much smaller farm sizes than any of the three other CSAs involved in the analysis, particularly the UK CSA indicating that the structure of the farming industry in Podlaskie is very different. Differences in farm size are reflected strongly in the average level of SFP support received in both of the CSAs, as shown in Table 1 below.

Off-farm work is potentially an important element of local economic linkage for farm households. Table 1 shows the percentage of farm households with one or more members of the households working off-farm and the proportion of total household income from such work. Farm households in the Podlaskie sample have a lower rate of off-farm work than those in North East Scotland but even in this case more than a quarter of households had someone employed in another occupation. The survey responses also suggested less variety in types of job for household members working off the farm in Podlaskie than in the UK CSA. The overall mean percentage of farm household income from off-farm work in Podlaskie is also lower (14% compared to 17.5% on average). In the UK region, there is a small percentage of off-farm work that

Table 1. Structure of farm samples in terms of production types
Tabela 1. Struktura próby badawczej z uwzględnieniem typów produkcyjnych

Specification	Podlaskie (PL)		North East Scotland (UK)	
Farm type	%	mean (ha)	%	mean (ha)
Cattle	15.2	24	60.3	193
Crops	22.1	9	21.4	179
Dairy	40.2	39	1.3	n/a
Mixed	9.8	17	15.2	183
Granivores	12.7	13	1.8	n/a
Total	100%		100%	
Mean sfp per farm (euros)	2,651		41,383	
% of farms households with off farm work	27.5		45.5	
Mean % of total household income from off farm work	14		17.5	
% of farms households with on farm diversification	8.2		20.2	
Mean % of total household income from diversification	37.2		4.0	

Source: Own research.
Źródło: Badania własne.

is earning significant amounts for the farm household, reflecting the local economic context, where there is a very low unemployment rate, and many opportunities for high quality work with associated remuneration. In contrast most of the jobs undertaken by off-farm workers in the Podlaskie CSA are less skilled, such as shop assistants, blue collar workers, drivers or office clerks, although some teachers and bank staff were included in the sample.

RESULTS

The results suggest very different economic geographies in each regions (Table 2). For all two CSAs, the distances to elementary/primary school, or hospital are relatively similar or, at least within the same order of magnitude. However the average distance to where the household does its grocery shopping is far lower in Podlaskie and importantly, much closer than the nearest town with a minimum of 3,000 inhabitants. In contrast the average distance to a city with more than 50,000 population is lowest in Podlaskie. With the exception of distance to local secondary school and nearest hospital the average distances in Podlaskie are lower than in North East Scotland. In both cases, distances travelled for major household items are further than for groceries, and the distances to the services included in the table (primary schools, secondary schools and hospital) all follow the pattern expected consistent with central place theory and the existence of an urban hierarchy.

Table 2. Average distance from household to principal locations for household inputs (km)
Tabela 2. Przeciętna odległość gospodarstw do ważniejszych miejsc (km)

Specification	Average distance [km]	
	Podlaskie (PL)	North East Scotland (UK)
Groceries	4.1	11.0
Major household items	16.8	27.7
Local primary school	4.4	4.6
Local secondary school	17.6	11.3
Nearest hospital	20.4	19.4
Nearest town > 3,000	10.8	13.2
Nearest city > 50,000	24.5	44.9

Source: Own research.
Źródło: Badania własne.

Table 3 below shows that the mean distance to suppliers for all farm inputs in the Podlaskie (PL) CSA is much lower than for the other CSAs and, importantly less than the mean distance to the nearest town with 3,000 or more population. In contrast all inputs are sourced at average distances further than that to the nearest town in North East Scotland. This suggests that the spatial structure of agri-businesses is quite different between the with Podlaskie farm households having a much more localised agricultural economy in distance terms than the UK CSA. For North East Scotland, fertilizer in particular is sourced at a considerably greater distance.

Table 3. Average distance to input suppliers (km)
Tabela 3. Przeciętna odległość do dostawcy środków produkcji

Specification	Average distance [km]	
	Podlaskie (PL)	North East Scotland (UK)
Distance to nearest town (> 3000 population)	10.8	13.2
Fertilizer	7.2	49.2
Machinery	6.9	17.9
Seed	7.4	40.0
Chemicals	6.9	33.6
Feed	6.8	39.5
Fuel	6.7	23.5
Services	5.8	21.8

Source: Own research.
Źródło: Badania własne.

On the basis that previous research has indicated that community attachment influences input purchasing behaviour [Foltz and Zeuli 2005], respondents were asked to indicate the strength of their attachment to the local area on a Likert scale ranging from 0 ("Not at all") to 5 ("Highly attached"). The results are presented in Table 4 below. The strength of attachment expressed by Polish farmers was extremely high with 58% categorising themselves as highly attached compared to 26% in North East Scotland where farmers are more likely to categorise themselves attached at levels 3 and 2. Interestingly, some respondents in the UK CSA went so far as to categorise themselves as not at all attached to the local community. In Podlaskie no-one selected the categories 2–0.

Table 4. Sense of attachment
Tabela 4. Poczucie przynależności do lokalnej społeczności

Strength of attachment (1–5 scale)	Podlaskie (PL)	North East Scotland
	% of farmers	
0 (Not at all)	0	3.1
1	0	3.6
2	0	14.2
3	5.7	17.3
4	34.8	34.7
5 (Highly attached)	57.8	25.8
Missing	1.6	1.3
Total	100	100

Source: Own research.
Źródło: Badania własne.

The strength of attachment expressed by farmers seems to be reflected in their commercial relations with others members of local economy. Defining within the locality as being within the distance of the nearest town, Table 5 below shows the percentage of farm input purchases that are within this distance for both of the CSAs and for each input type. This suggests that the spatial structure of agri-businesses is quite different between the

with Podlaskie farm households having a much more localised agricultural economy in distance terms than the the UK CSA. For North East Scotland, fertilizer in particular is sourced at a considerably greater distance. The percentages of inputs sourced within the distance to the nearest town are higher for Podlaskie than for North East Scotland (UK). The proportion of farms sourcing fertilizer and agrichemicals locally in the UK CSA is particularly low. The results for services are also very low when compared with the Podlaskie CSA and with prior expectations.

Table 5. Percentage of local farm input purchases (defined as within distance to nearest town) for Polish and UK CSAs

Tabela 5. Udział rolników zakupujących środki do produkcji „lokalnie" (w odległości nie większej niż odległość do najbliższego miasta

Inputs	Local farms [%]	
	Podlaskie (PL)	North East Scotland (UK)
Fertilizer	83.2	15.6
Chemicals	85.2	19.6
Seed	78.2	24.4
Feed	66.4	20.4
Machinery	84.4	34.7
Fuel	85.7	34.2
Services	77.9	21.3

Source: Own research.
Źródło: Badania własne.

As apparent from above tables, the economic geography of the two CSAs is very different with farm households in the Podlaskie CSAs having interactions within a smaller spatial scale than the North East Farm households. Based on this, further analysis was conducted, changing the definition of local between the two CSAs (Table 5). For Podlaskie, local was redefined to mean within market reach of where farm households do their grocery shopping which was nearer than the distance to the nearest town with a population over 3,000. In other words, the spatial scale of the area defined as local was reduced. As anticipated, the proportion of local transactions falls but still remains high at over 60% for all but feed. Even at this spatial level, the Podlaskie farm households have strong local integration. If one change the definition of local for UK CSA to be within market reach of the nearest city, in order to adapt to the regional economic context, this brings the UK CSA more into line with the Podlaskie CSA. However, even with the definition of local expanded to cover a longer distance from the farm, some inputs, still have a significant percentage of suppliers beyond the local city.

From a rural development perspective, a key question related to the above analysis is the extent to which farm household transactions contribute to the local economy in monetary terms. Purchases of inputs from agents within the region will generate income in the local economy whereas purchases from non local agents will represent a "leakage" from the farm household to the "rest of the world". The analysis of sales patterns also has rural development implications. Most agricultural outputs need to undergo further processing before being sold for final consumption. Thus, sales to agents outside the region there-

Table 6. Percentage of farms sourcing inputs within the distance to place where groceries are purchased for Podlaskie (PL) and within the distance to the nearest city
Tabela 6. Udział gospodarstw kupujących środki do produkcji nie dalej niż miejscowość ze sklepem, w którym kupowane są artykuły spożywcze

Inputs	Local farms [%]	
	(within grocery reach)	(within city reach)
Fertilizer	61.9	71.8
Agro-chemicals	64.3	80.1
Feed	51.2	73.5
Seed	n/a	78.7
Machinery	63.9	90.0
Fuel	64.7	91.0
Other Services	61.5	95.5

Source: Own research.
Źródło: Badania własne.

fore represents an opportunity forgone (in terms of generating additional value added) although, of course, they do result in income flowing into the region.

Table 7 considers the average value of input expenditure that is leaked from the locality. The results are presented by farm size where in this case, instead of land area, turnover is used as a proxy of economic size. In particular, for the Podlaskie sample, farms with an annual turnover of less than 30,000 PLN are categorised as small, those with a turnover between 30,000 and 100,000 PLN are categorised as medium sized, and finally those with a turnover of more than 100,000 PLN are categorised as large farms. The equivalent boundaries for the North East Scotland sample are chosen except turnover in this case is defined in £ sterling. The definition of locality in this case is within city reach for the UK CSA, but within reach of where households do their grocery shopping for the Polish CSA.

Table 7. Average annual value of leakage (PLN) by farm size
Tabela 7. Przeciętna wartość wydatków do podmiotów spoza lokalnej gospodarki według wielkości gospodarstw

Input	Podlaskie (PL)			Nort East Scotland UK		
	Farm size			Farm size		
	Small (n = 96)	Medium (n = 115)	Large (n = 33)	Small (n = 60)	Medium (n = 63)	Large (n = 81)
Fertilizer	1,382	2,204	5,748	7,209	16,369	44,952
Seed	406	981	3,023	1,45	2,54	8,104
Agrichemicals	488	834	1,7	12,5	5,19	17,664
Fuel	4,051	7,147	21,58	2,75	5,16	13,375
Feed	5,569	9,795	28,5	2,683	7,688	27,929
Machinery	1,547	2,442	8,2	700	5,75	17,5
Services	1,894	3,388	7,28	0	1,95	2,1

Source: Own research.
Źródło: Badania własne.

One of the factors creating any kind of linkages could be human perception of existing relationships. Table 8 shows the results for farmers' perceptions of the importance of agriculture to the local economy. Nearly all Podlaskie farms rated agriculture as Important (63.5%) or Vital (28.3%). This contrasts with North East Scotland where the slightly more than half perceived agriculture to be vital (51.1%) to the local economy, and a third (34.8%) felt it to be important. A similar percentage as in the Polish CSA felt that it was of less importance than other sectors. The perceptions of North East Scotland farmers are interesting, as they do not 'match' the findings on localness in inputs and farm households purchasing habits, yet Podlaskie farm households have very 'local' lives in comparison, yet are less likely to regard agriculture as vital to their local economy. Table 9 shows the explanations given by those who regarded agriculture as vital to the local economy. There were only slight differences between North East Scotland and Podlaskie. The main reason in both, the Polish and the UK CSAs was because they considered agriculture to be the

Table 8. Importance of agriculture to local economy
Tabela 8. Znaczenie rolnictwa dla lokalnej gospodarki

Specification of answers	Poland n = 244	UK n = 224
	% of farmers	
Absolutely vital	28.3	51.1
Important	63.5	34.8
Less important than other sectors	7.4	6.7
Totally irrelevant	0	1.7
Don't know/blank	0.8	5.7
Total	100	100

Source: Own research.
Źródło: Badania własne.

Table 9. Reasons given for importance of agriculture to the local economy
Tabela 9. Argumenty wskazujące na ważność rolnictwa w lokalnej gospodarce według rolników

Reason	Poland	UK
	% of answers	
agriculture is a main source of income or employment for local people	41	47
agriculture supports the wider upstream and downstream agri-business sector	26	34
supporting tax revenue	12	–
source of seasonal work	7	–
source of agricultural products/food	5	24
contributes to the development of transport infrastructure	5	–
stimulates technological development	3	–
Environmental and landscape preservation	–	10
Preserving the rural way of life	–	3

Source: Own research.
Źródło: Badania własne.

main source of income or employment for local people. The second most cited reason was again the same in both Podlaskie and North East Scotland, that agriculture was a support for the wider agri-business sector through buying inputs (as well as supplying outputs).

From the evolution point of view farmers' perceptions of change in importance of agriculture to the local economy seems to be an important issue (Table 10). The majority of farmers in Podlaskie felt that agriculture had either remained the same or increased in importance. Certainly the localness of purchasing and selling in relation to farm households would suggest that agriculture is an important element of the local economy. In the UK CSA however, comparatively few felt it had increased in importance, and a much a higher percentage (36%) felt that it had decreased in importance. This perception would be in line with the increasing influence of the oil and gas sector on the local economy of North East Scotland.

Table 10. Change in importance of agriculture to local economy (%)
Tabela 10. Zmiany w znaczeniu rolnictwa dla lokalnej gospodarki

Specification of answers	Podlaskie	North East Scotland
	% of farmers	
Increased	44.67	15.11
Stayed the same	47.95	39.56
Decreased	4.51	36.00
Missing or don't know	2.87	8.00
Total	100	100

Source: Own research.
Źródło: Badania własne.

In the last part of questionnaire farmers were asked about their perception of CAP significance for local economy. Table 11 above shows the responses to the question "Do you think CAP has affected the extent of linkages between your farm and farm household and the local economy". It is possible that not all respondents interpreted the meaning of this question in the same way. However, the responses suggest that about half of Podlaskie farmers do not consider that CAP has affected their linkages with the local economy. Coupled with the relatively low value of the average CAP per holding, and given the very high percentages of Podlaskie farm households and businesses that are still circulating

Table 11. Perception of CAP influence on local economic linkages
Tabela 11. Postrzeganie wpływu WPR na powiązania lokalne

Specification of answers	Podlaskie	North East Scotland
	% of farmers	
Yes	33.61	37.95
No	51.23	26.34
Don't know	13.93	27.23
Missing	1.23	0
Total	100	100

Source: Own research.
Źródło: Badania własne.

their output on farm, sourcing their inputs locally, and which are also selling locally in what should be considered a traditional manner, this response from individual farmers is not surprising. However, the North East Scotland results reveal many more respondents to be uncertain about the effect CAP has had on their linkages with the local economy. However a slightly higher percentage were positive that it had had an impact on local economic linkages than in the Polish CSA.

CONCLUSIONS

A traditional argument connected to the CAP is that, by supporting agriculture, the CAP is helping to maintain the economic vitality rural communities, particularly in disadvantaged regions where alternative income opportunities are limited. Through buying inputs, using local labour and through the supply of output to downstream customers and processors, farm households support employment and generate income in the local rural economy. However the type of linkages between farm households and the broader economy are not completely captured by analysis of agri-food systems alone. Instead, through farm diversification, farm household consumption and off farm work, other linkages exit. For example, pluri-activity is clearly an important strategy for many farm households. Moreover, rural economies themselves are changing with more dependence on non-traditional sources of income. All this leads to conclusion that farm households have multiple links with the wider rural economy.

The papers provides some new insights into the spatial patterns in two different EU regions. Farm households in the UK and Polish case study areas had particularly strong differences in respect to their purchasing patterns. While households in the Podlaskie have many transactions within a short distance from the farm, farm households in North East Scotland were likely to trade with far more distant suppliers and purchases. As one of the reasons of strong local linkages in Podlaskie region over-employment in the Polish farm sector is indicated [Henningson 2009; Chaplin et al. 2007]. It leads to continuing high share of small farms and associated lack of economies of scale. An associated argument is that the preponderance of small farms, while providing 'at home' livelihoods for a great many people, is constraining the development of the rural economy in the Podlaskie region [Kondratiuk-Nierodzińska et al. 2007]. A quite different situation can be observed in North East Scotland. What is local in north east Scotland covers a larger area – nearly all farm inputs for example are obtained within market reach of the nearest city of > 50,000. Culturally, this is sensible as the north east of Scotland is a relatively small area, focused on one medium sized city, albeit containing two local authority administrations. It is pragmatic, because global changes to the structure of agri-business have seen consolidation of companies through acquisitions and mergers, with an associated spatial consolidation within the CSA which has reduced the opportunity for farm businesses to buy inputs closer to home.

Taking into account general patterns of evolution (developments in less developed countries that follow the west European path) it can be expected that linkages of farm households in Podlaskie region with its local economy will evaluate proportionately to the speed of general development of rural areas.

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POWIĄZANIA GOSPODARSTW DOMOWYCH ROLNIKÓW Z LOKALNĄ GOSPODARKĄ W PÓŁNOCNO WSCHODNIEJ SZKOCJI I W WOJEWÓDZTWIE PODLASKIM

Streszczenie. W artykule podjęto próbę określenia związków gospodarstw domowych rolników z lokalna gospodarką. Analizy przeprowadzono na zbiorowości gospodarstw z północno-wschodniej Szkocji i z województwa podlaskiego. Uzyskane rezultaty sugerują, iż siła związków gospodarstw z innymi podmiotami lokalnej gospodarki warunkowana jest ogólnym rozwojem regionu i uwarunkowaniami ekonomicznymi. Z przeprowadzonych badań wynika, iż w przypadku województwa podlaskiego większość transakcji miała charakter lokalny, podczas gdy w Szkocji relacje gospodarstw z otoczeniem były znacznie bardziej złożone i miały charakter mniej lokalny.

Słowa kluczowe: gospodarstwa domowe rolników, lokalna koncentracja, lokalna gospodarka

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