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Cash flow as an important solvency determinant of agricultural enterprises in the Slovak Republic

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Abstract

In this paper deals with the cash flow analysis in agricultural companies in particular regions of the Slovak Republic. At present, from a company's point of view it is not so important to reach a profit but to have a sufficient cash to keep solvency. On base of column and balance cash flow composition we determine in which areas agricultural companies invested money and what sources they used to finance their activities.

Agricultural companies in the Slovak Republic financed their activities particularly from internal sources, however, they used external sources, too. Companies situated in better natural conditions spent more external sources than companies in LFA. The companies used the financial sources in operating and investment activities equally.

Key words

Agricultural enterprises, cash flow analysis, net cash flow, balance composition of cash flow

Anotace

V príspevku sa zaoberáme analýzou peňažných tokov v podnikoch poľnohospodárskej prvovýroby v jednotlivých krajoch SR. V súčasnej dobe nie je dôležité z pohľadu podnikov vykazovať zisk, ale mať dostatok hotovosti na zachovanie platobnej schopnosti. Na základe stĺpcového a bilančného zostavenia cash flow zistíme do akých oblastí poľnohospodárske podniky investovali peniaze a aké zdroje využívali na financovanie svojej činnosti. Poľnohospodárske podniky SR financovali svoju činnosť najmä z interných zdrojov, avšak využívali i externé prostriedky. Podniky v lepších prírodných podmienkach čerpali externé prostriedky vo väčšej miere ako podniky v LFA. Prostriedky využívali rovnomerne v hospodárskej a investičnej činnosti.

Klíčová slova

Agricultural enterprises, cash flow analysis, net cash flow, balance composition of cash flow

Introduction

The aim of financial decision is to search possibilities for reaching of financial goals. From searching and evaluation of options to the acceptance of financial decision, it comes to the evaluation of basic categories such as profit, cash flow, risk, net present value and interest rate (Fetisovová E. and col., 2005). A financial analyst is interested in cash flow problems as a cause of financial situation development. The cash flow analysis identifies an influence of company's activities on determination of financial situation. Operating activity records elements of working capital, which have a relation to liquidity and investment activity, that is connected with the stability, and finally the financial activity is connected with company's solvency (Grünwald R., Holečková J., 2007). The basic attribute of company's market survival is to have sufficient financial means. So, it is necessary to analyze the financial intensity which depends on a character and cash positions, not only on the profit ability of the company.

Materials and Methods

The data used in this paper were gained from information sheets of the Ministry of Agriculture SR, prepared by the Research Institute of Agricultural and Food Economics in Bratislava. The paper analyzes cash flows in agricultural

companies in all regions of the Slovak Republic: Bratislava, Nitra and Trnava, which are integrated into a better natural conditions group according to a land price category. Trenčín, Banská Bystrica, Žilina, Košice and Prešov are situated in LFA (Less Favoured Area). The observed period is years 2000 – 2006. The authors analyzed 667 agricultural companies. The data were calculated per hectare of agricultural land. The cash flow can be composited by means of a direct and an indirect methodology. In the paper, authors used an indirect method, concretely a balance composition of cash flow because it is more compendious than a column composition. The balance composition of cash flow creates sources from which the company draws its financial sources and use, it means, in which areas the company uses financial sources (Gurčík L., 2004). The rule of the balance composition of cash flow is that the sources have to be equal in use. In view of the company, the sources are divided into the internal and external ones. The use is monitored in three activities: operating, financial and investment activities. A balance compilation of cash flow is illustrated in the schema 1.

Results

Bratislava region is situated in the west of Slovakia. In this region, 38 companies were analyzed. The region is the smallest of all regions in the Slovak Republic and takes 4,2 % of its area. In the first three years of the observed period, the companies used most money in the investment activity which includes increase of non-current asset and depreciation. After 2004, most money went to the operating activity. In 2006, the companies used in operating activity 18 953 SKK.ha-1. This situation was influenced by the increase of stocks and financial accounts. Internal sources were affected by the cash flow I. The increase of internal sources was around 3 786 SKK ha-1 in the monitored period.

Decrease/Increase	Items
Decrease	Short-term liabilities
Increase	Short-term receivables
Increase	Stocks
Increase	Financial accounts
Usage in operating activities	
Increase	Non current assets include depreciation
Usage in investment activities	
Increase	Receivables for subscriptions for equity capital
Increase	Long-term receivables
Decrease	Long-term liabilities
Decrease	Long-term bank loans
Decrease	Current bank loans and short-term financial assistance
Decrease	Equity capital - profit
Usage in financial activities	
USAGE	
	Cash flow I.
Decrease	Short-term receivables
Decrease	Stocks
Decrease	Financial accounts
Decrease	Long-term receivables
Decrease	Non current assets include depreciation
Internal sources	
Increase	Short-term liabilities
Increase	Current bank loans and short-term financial assistance
Increase	Long-term liabilities
Increase	Long-term bank loans
Increase	Equity capital - profit
External sources	
SOURCES	
USE = SOURCES	

Source: Gurčík, Ľ. 2004. Business analyze and controlling. Nitra: SUA, 2004. ISBN 80-8069-449-4

Schema 1: Blance composition of cash flow..

The companies in this region utilized most of external sources in 2004; the external sources value exceeded the internal sources by 5 533 SKK. ha-1, and in 2006, the value of external sources exceeded the internal ones by 11 196 SKK.ha-1.

The table 2 shows the balance composition of cash flow in companies located in the region Trnava. This region is composed of 125 agricultural companies and is situated in the western part of Slovakia taking 8,5 % of its area. At the beginning of the observed period, the companies used most money in financial activity (7 093 SKK. ha-1). This situation was influenced by decrease of long-term liabilities, equity capital – profit and a value of

current bank loans, and a short-term financial assistance. In the next period, most money was used in investment activity. The same trend appeared in the last year of the monitored period. In 2005, the companies used most money in operating activity (7 046 SKK. ha-1). This situation was influenced by increase of short-term receivables. The companies financed majority of their activities from internal sources.

The table 3 describes the balance composition of cash flow in agricultural companies of the region Nitra. 130 companies were analyzed here. It is the fifth largest region of all Slovak regions and occupies 12,9 % of the total area of Slovakia.

Items/years	2001	2002	2003	2004	2005	2006
- short-term liabilities	-2200	-799	-1200	-879	-904	-2538
+ short-term receivables	799	1402	709	5970	2653	1342
+ stocks	2461	3261	1135	2159	4677	9539
+financial accounts	696	712	901	4725	983	5533
Usage in operating activities	**6156**	**6173**	**3945**	**13733**	**9217**	**18953**
+ non current assets + depreciation	6978	6296	6087	12322	5155	17592
Usage in investment activities	**6978**	**6296**	**6087**	**12322**	**5155**	**17592**
+ receivables for subscriptions for equity capital	4	0	0	545	1	0
+ long-term receivables	110	510	1493	0	58	24
- long-term loans	-416	-322	-248	-281	-303	-169
- long-term liabilities	-1855	-1732	-1679	-595	-324	-1730
- current bank loans and short-term financial assitance	-328	-378	-399	-1459	-854	-1232
- equity capital – profit	-1126	-1369	-2073	-712	-2061	-862
Usage of financial activities	**3839**	**4310**	**5892**	**3592**	**3599**	**4017**
Cash flow I.	5802	8935	5143	6221	8450	7549
- short-term receivables	-2145	-499	-1487	-1280	-2275	-4071
-financial accounts	-1257	-1028	-514	-668	-528	-1428
- stocks	-1287	-1226	-1753	-1636	-374	-992
- long-term receivables	-78	-27	-168	-1574	-640	-227
- non current +depreciation	-324	-80	-532	-673	-1164	-415
- receivables for subscriptions for equity capital	-3	-129	-545	-5	0	-1
Internal sources	**10897**	**11924**	**10141**	**12057**	**13432**	**14683**
+short-term liabilities	808	1628	1688	2070	1545	2407
+current bank loans and short-term financial assistance	547	584	980	1018	435	914
+long-term liabilities	893	865	447	3431	631	6309
+long-term loans	72	361	1027	414	552	3115
+equity capital–profit	3757	1419	1640	10657	1377	13134
External sources	**6076**	**4856**	**5783**	**17590**	**4539**	**25879**
Use = Sources	**16973**	**16780**	**15924**	**29647**	**17971**	**40561**

Source: Information sheets MP SR and own calculation.

Table 1: Balance composition of cash flow in companies of region Bratislava in Skk per ha of agricultural land.

Items/Years	2001	2002	2003	2004	2005	2006
- short-term liabilities	-1842	-746	-1211	-1057	-1314	-2419
+ short-term receivables	569	833	1708	1158	3202	1836
+ stocks	1106	1752	2662	1403	1791	1318
+financial accounts	1413	659	436	652	738	1561
Usage of operating activities	**4930**	**3990**	**6017**	**4270**	**7046**	**7133**
+ non current assets + depreciation	4827	5781	8543	4639	4319	8203
Usage of investment activities	**4827**	**5781**	**8543**	**4639**	**4319**	**8203**
+ receivables for subscriptions for equity capital	1	106	0	0	1	0
+ long-term receivables	21	86	14	112	30	170
- long-term loans	-837	-323	-343	-600	-693	-530
- long-term liabilities	-2388	-1197	-1193	-609	-720	-988
- current bank loans and short-term financial assistance	-1059	-505	-697	-1235	-1116	-1077
- equity capital – profit	-2787	-521	-925	-1084	-643	-988
Usage in financial activities	**7093**	**2738**	**3172**	**3640**	**3201**	**3753**
Cash flow I.	3440	6051	6258	3439	5541	6845
- short-term receivables	-3030	-1009	-723	-941	-536	-1033
- financial accounts	-531	-545	-868	-468	-523	-754
- stocks	-1717	-447	-723	-2582	-1004	-1173
- long-term receivables	-211	-60	-239	-55	-167	-58
- non current asset + depreciation	-1664	-326	-543	-1084	-566	-78
- receivables for subscriptions for equity capital	-2	-1	-108	-13	-2	0
INTERNAL SOURCES	**10593**	**8439**	**9462**	**8581**	**8338**	**9940**
+ short-term liabilities	1303	1520	3554	1688	2147	1864
+ current bank loans and short-term financial assistance	641	1011	2308	590	1355	1590
+ long-term liabilities	901	199	232	513	702	1898
+ long-term loans	435	534	676	392	780	775
+ equity capital–profit	2977	806	1499	785	1242	3023
EXTERNAL SOURCES	**6257**	**4069**	**8270**	**3967**	**6227**	**9150**
USAGE = SOURCES	**16850**	**12508**	**17732**	**12549**	**14565**	**19090**

Source: Information sheets MP SR and own calculation.

Table 2: Balance composition of cash flow in companies of region Trnava in SKK per ha of agricultural land (SKK.ha-1).

It lies in the southwestern part of SR. At the beginning and at the end of the observed period, the companies invested financial sources particularly in investment activities. In 2004, the use in financial activities was higher than in other activities of the companies, and it exceeded 6 099 SKK.ha-1. Compared to the previous period, this increase was particularly influenced by the increase of current bank loans and a short-term financial assistance. In the years 2003 and 2005, the companies spent most of their money in operating activity. From a viewpoint of sources, the use of internal sources was dominant. Only in the year 2002, the external sources exceeded the internal sources by about 10 672 SKK.ha-1 which was caused by increase of current bank loans, and also long-term loans and short-term liabilities.

The balance composition of cash flow of companies in the region Trenčín is illustrated in the table 4. This region belongs to smaller Slovak regions and is situated in the northwestern part of Slovakia.

There are 63 agricultural companies in this region. Throughout the observed period, the companies used money particularly in the operating activity. In 2005, the use of money in financial activities exceeded the use of money in operating activities (16 SKK.ha-1). The internal sources were used more than the external ones. The value of internal sources was positively influenced by the cash flow I.

The table 5 shows the balance composition of cash flow of the companies in the region Žilina. In this region, 78 agricultural companies are located. Žilina region is situated in the north of Slovakia. It is the third largest region of the Slovak Republic and occupies 13, 9 % of the state area. The companies are in LFA. They used most money in investment activity and this use increased year by year. The use of money decreased in the year 2005 and the companies invested in operating activity. The increase of use in this activity affected the increase of short-term receivables and financial

accounts. To the year of 2006, the increase was 4 590 SKK.ha-1. In 2006 the companies used most money in investment activity (15 673 SKK. ha-1). Even here an increase in the financial activity was obvious (10 762 SKK.ha-1). Till 2003, the companies had used for financing particularly internal sources, after this year the situation changed and companies began to use more external sources.

The balance composition of cash flow of companies in the region Banská Bystrica is illustrated in the table 6. There are 64 agricultural companies in this region. This region is the biggest region of the Slovak Republic and it spreads in the southern part of Slovakia. The companies are situated in LFA. The use of money in the region Banská Bystrica was divided into two activities – operating and investment activities. The use of money increased in operating activity from 2004. The internal sources were higher than the external sources throughout the whole observed period.

The companies in Košice region are situated in LFA. The authors analyzed 97 companies in this region. It is situated in the southeastern part of Slovakia and takes 13, 8 % of its area. The companies used most money in investment activities till the year 2004. After 2004, the situation changed, most money went in the operating activity. From a view-point of sources, the companies used internal sources. In 2004, the external sources were higher than the internal ones by 1 254 SKK.ha-1. This situation was influenced by decrease of cash flow I.

Items/Years	2001	2002	2003	2004	2005	2006
- short-term liabilities	-912	-1407	-2620	-3266	-770	-1777
+ short-term receivables	836	3435	1024	997	2766	2155
+ stocks	1097	7047	1897	746	2449	1562
+financial accounts	879	905	1032	533	1197	1550
Usage in operating activities	**3724**	**12794**	**6572**	**5542**	**7182**	**7030**
+ non current assets + depreciation	4814	15296	6445	5350	4904	7929
Usage in investment activities	**4814**	**15296**	**6445**	**5350**	**4904**	**7929**
+ receivables for subscriptions for equity capital	1	8	2	0	1	10
+ long-term receivables	66	671	81	245	190	61
- long-term loans	-389	-283	-403	-602	-552	-644
- long-term liabilities	-907	-1080	-853	-650	-384	-484
- current bank loans and short-term financial assistance	-662	-655	-1639	-2929	-990	-679
- equity capital – profit	-1177	-718	-2550	-1673	-2246	-870
Usage in financial activities	**3202**	**3415**	**5509**	**6099**	**4363**	**2742**
Cash flow I.	3130	8457	7063	3001	6039	5756
- short-term receivables	-2080	-699	-1442	-1706	-2081	-1358
- financial accounts	-391	-607	-677	-1221	-547	-764
- stocks	-845	-488	-2870	-3517	-1213	-937
- long-term receivables	-70	-102	-269	117	-189	-414
- non current asset + depreciation	-489	-59	-110	-924	-537	-376
- receivables for subscriptions for equity capital	-5	-4	-10	-4	0	-1
INTERNAL SOURCES	**7010**	**10416**	**12443**	**10501**	**10607**	**9600**
+ short-term liabilities	2059	4484	1777	1572	2229	2116
+ current bank loans and short-term financial assistance	1049	3078	1812	629	1133	1874
+ long-term liabilities	512	485	652	904	460	1118
+ long-term loans	363	922	777	737	506	841
+ equity capital–profit	746	12118	1065	2647	1515	2152
EXTERNAL SOURCES	**4730**	**21088**	**6084**	**6489**	**5842**	**8100**
USAGE = SOURCES	**11740**	**31505**	**18526**	**16990**	**16449**	**17701**

Source: Information sheets MP SR and own calculation.

Table 3: Cash flow balance composition of companies in Nitra region in SKK per ha of agricultural land.

Items/Years	2001	2002	2003	2004	2005	2006
- short-term liabilities	-3879	-2938	-5188	-3078	-2350	-4610
+ short-term receivables	3365	1454	1108	5768	8226	3509
+ stocks	682	2457	3281	519	1712	1080
+financial accounts	860	2486	909	1911	951	3038
Usage in operating activities	**8785**	**9334**	**10486**	**11276**	**13239**	**12238**
+ non current assets + depreciation	8112	5579	8528	3514	4461	11572
Usage in investment activities	**8112**	**5579**	**8528**	**3514**	**4461**	**11572**
+ receivables for subscriptions for equity capital	0	0	0	0	0	128
+ long-term receivables	13	27	135	69	31	12
- long-term loans	-851	-460	-383	-626	-354	-807
- long-term liabilities	-639	-567	-663	-479	-551	-800
- current bank loans and short-term financial assistance	-278	-376	-1049	-848	-4888	-836
- equity capital – profit	-1112	-1781	-1659	-4944	-7430	-1006
Usage in financial activities	**2893**	**3212**	**3889**	**6967**	**13255**	**3589**
Cash flow I.	7656	9522	7561	4396	6981	12090
- short-term receivables	-893	-1651	-2720	-1788	-4651	-3882
- financial accounts	-1318	-669	-2348	-588	-2982	-449
- stocks	-2728	-1571	-2221	-2857	-2996	-931
- long-term receivables	-179	-69	-92	-200	-110	-76
- non current asset + depreciation	-399	-186	-245	-3578	-6112	-135
- receivables for subscriptions for equity capital	0	-3	-4	-10	0	0
INTERNAL SOURCES	**13174**	**13672**	**15190**	**13417**	**23833**	**17564**
+ short-term liabilities	1927	674	1693	939	4240	6290
+ current bank loans and short-term financial assistance	274	583	440	4961	1286	1186
+ long-term liabilities	481	338	113	817	466	980
+ long-term loans	156	1094	510	412	783	636
+ equity capital–profit	3778	1765	4957	1211	347	742
EXTERNAL SOURCES	**6616**	**4453**	**7713**	**8340**	**7122**	**9834**
USAGE = SOURCES	**19790**	**18125**	**22903**	**21757**	**30955**	**27399**

Source: Information sheets MP SR and own calculation.

Table 4: Cash flow balance composition in companies of region Trenčín in SKK per ha of agricultural land.

The balance composition of cash flow of companies in Prešov region is illustrated in the table 8. The region Prešov occupies the north-east part of the Slovak Republic and takes 18,3 % of the whole state are. It is the second biggest region. 72 agricultural companies were analyzed here. This region belongs to LFA. At the beginning of observed period, the companies used most money in financial activity (7 171 SKK.ha-1). This value was the highest in this activity in the observed period. In 2004, the companies used most money in investment activity (6 072 SKK. ha-1). The companies financed their activities from their internal sources, they used the external sources only in 2004. This year, the external sources were higher than the internal sources by 2 486 SKK. ha-1.

The next table presents a quantification of cash flow I. and its share in the use in operating activity in regions of Slovakia. According to the results in the table 9 we can determine that the companies in LFA (the region Žilina, the region Banská Bystrica, the region Prešov and the region Košice) had a higher internal financial potential than companies in better natural conditions. They could finance their operating activity from their own financial potential more than 100 % in 2001 – 2003. Of the better natural conditions, we can mention companies situated in the region Bratislava and the region Trnava which which shared in the cash flow I. on operating activity more than 100 % in 2002 and 2003.

Items/Years	2001	2002	2003	2004	2005	2006
- short-term liabilities	-628	-417	-479	-511	-1182	-2321
+ short-term receivables	272	248	407	822	1491	2560
+ stocks	509	553	888	1100	838	3466
+financial accounts	449	183	121	321	1757	1510
Usage in operating activities	**1849**	**1400**	**1895**	**2747**	**5267**	**9857**
+ non current asset + depreciation	3311	3726	3992	8609	3397	15673
Usage in investment activities	**3311**	**3726**	**3992**	**8609**	**3397**	**15673**
+ receivables for subscriptions for equity capital	1	111	3	16	1363	33
+ long-term receivables	11	50	13	39	19	177
- long-term loans	-230	-233	-236	-196	-268	-701
- long-term liabilities	-1347	-593	-470	-494	-496	-1477
- current bank loans and short-term financial assistance	-545	-238	-50	-280	-185	-2551
- equity capital – profit	-678	-597	-950	-485	-363	-5823
Usage in financial activities	**2810**	**1821**	**1723**	**1510**	**2694**	**10762**
Cash flow I.	3353	3042	3182	2966	3297	5431
- short-term receivables	-786	-390	-306	-298	-457	-1563
- financial accounts	-382	-433	-259	-116	-154	-1402
- stocks	-377	-384	-287	-685	-428	-1457
- long-term receivables	-17	-41	-67	-84	-24	-14
- non current asset + depreciation	-418	-129	-595	-309	-290	-5779
- receivables for subscriptions for equity capital	-21	-4	-18	-216	-5	-1235
INTERNAL SOURCES	**5343**	**4422**	**4715**	**4675**	**4655**	**16881**
+ short-term liabilities	865	905	1135	1391	1013	1894
+ current bank loans and short-term financial assistance	178	216	321	292	2643	1803
+ long-term liabilities	116	249	485	780	301	1440
+ long-term loans	222	496	253	452	547	1098
+ equity capital–profit	1248	659	701	5277	2201	13176
EXTERNAL SOURCES	**2628**	**2525**	**2895**	**8192**	**6704**	**19411**
USAGE = SOURCES	**7971**	**6947**	**7609**	**12867**	**11359**	**36292**

Source: Information sheets MP SR and own calculation.

Table 5: Cash flow balance composition in companies of region Žilina in SKK per ha of agricultural land.

Items/Years	2001	2002	2003	2004	2005	2006
- short-term liabilities	-762	-694	-931	-2661	-2166	-681
+ short-term receivables	1649	631	304	714	626	1719
+ stocks	924	1104	733	652	1050	1035
+financial accounts	557	938	161	844	1341	628
Usage in operating activities	**3893**	**3349**	**2129**	**4871**	**5183**	**4063**
+ non current asset + depreciation	3327	3670	4910	3081	2665	5163
Usage in investment activities	**3327**	**3670**	**4910**	**3081**	**2665**	**5163**
+ receivables for subscriptions for equity capital	1	0	0	976	0	0
+ long-term receivables	9	4	23	54	20	59
- long-term loans	-328	-139	-185	-268	-256	-383
- long-term liabilities	-499	-403	-669	-557	-894	-117
- current bank loans and short-term financial assistance	-432	-815	-191	-400	-637	-199

- equity capital – profit	-1699	-1130	-869	-1164	-1973	-401
Usage in financial activities	**2969**	**2492**	**1936**	**3418**	**3779**	**1159**
Cash flow I.	1982	3448	3136	1198	3056	3130
- short-term receivables	-2212	-632	-951	-1146	-975	-698
- financial accounts	-521	-564	-890	-378	-152	-935
- stocks	-786	-377	-653	-1673	-732	-712
- long-term receivables	-172	-55	-2	-63	-57	-41
- non current asset + depreciation	-331	-331	-373	-1401	-1215	-146
- receivables for subscriptions for equity capital	-33	-2	-2	0	-978	0
INTERNAL SOURCES	**6037**	**5408**	**6007**	**5860**	**7164**	**5661**
+ short-term liabilities	2242	2326	1433	1307	851	1012
+ current bank loans and short-term financial assistance	405	675	300	302	540	980
+ long-term liabilities	433	200	170	333	702	891
+ long-term loans	212	354	283	447	617	482
+ equity capital–profit	859	548	782	3121	1753	1359
EXTERNAL SOURCES	**4152**	**4103**	**2968**	**5510**	**4463**	**4724**
USAGE = SOURCES	**10189**	**9512**	**8975**	**11370**	**11627**	**10385**

Source: Information sheets MP SR and own calculation.

Table 6: Cash flow balance composition in companies of region Banská Bystrica in SKK per ha of agricultural land.

Items/Years	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
- short-term liabilities	-678	-722	-686	-789	-827	-1295
+ short-term receivables	430	343	583	461	423	948
+ stocks	742	1287	890	419	845	502
+financial accounts	427	298	202	244	1319	1334
Usage in operting activities	**2277**	**2650**	**2360**	**1912**	**3414**	**4079**
+ non current asset + depreciation	3176	3190	3270	2434	2750	3095
Usage in investment activities	**3176**	**3190**	**3270**	**2434**	**2750**	**3095**
+ receivables for subscriptions for equity capital	0	0	15	887	0	0
+ long-term receivables	34	50	39	217	33	36
- long-term loans	-124	-127	-221	-204	-147	-167
- long-term liabilities	-258	-421	-624	-680	-1057	-629
- current bank loans and short-term financial assistance	-120	-173	-382	-316	-192	-147
- equity capital – profit	-407	-406	-963	-406	-1086	-647
Usage in financial activities	**943**	**1177**	**2244**	**2709**	**2514**	**1626**
Cash flow I.	2757	2999	2755	836	3250	3076
- short-term receivables	-749	-568	-578	-615	-471	-386
- financial accounts	-175	-375	-382	-242	-152	-520
- stocks	-421	-273	-668	-879	-403	-637
- long-term receivables	-170	-41	-40	-23	-159	-44
- non current asset + depreciation	-93	-114	-610	-306	-199	-227
- receivables for subscriptions for equity capital	-30	0	0	0	-889	-17
INTERNAL SOURCES	**4394**	**4371**	**5032**	**2901**	**5523**	**4906**
+ short-term liabilities	1029	834	744	866	1052	664
+ current bank loans and short-term financial assistance	254	367	328	228	631	1851

+ long-term liabilities	145	529	954	571	473	390
+ long-term loans	174	473	187	68	227	310
+ equity capital–profit	400	444	629	2421	773	679
EXTERNAL SOURCES	**2002**	**2647**	**2842**	**4155**	**3156**	**3894**
USAGE = SOURCES	**6396**	**7018**	**7874**	**7056**	**8678**	**8801**

Source: Information sheets MP SR and own calculation.

Table 7: Cash flow balance composition in companies of region Košice in Skk per ha of agricultural land.

Items/Years	2001	2002	2003	2004	2005	2006
- short-term liabilities	-1193	-406	-2413	-498	-1087	-828
+ short-term receivables	526	854	607	450	1670	1809
+ stocks	846	753	624	867	1049	708
+ financial accounts	525	408	328	267	1500	1304
Usage in operating activities	**3091**	**2421**	**3972**	**2083**	**5306**	**4649**
+ non current asset + depreciation	4774	3064	2347	6072	3489	4156
Usage in investment activities	**4774**	**3064**	**2347**	**6072**	**3489**	**4156**
+ receivables for subscriptions for equity capital	0	2	0	3	60	378
+ long-term receivables	23	144	46	246	27	49
- long-term loans	-288	-154	-143	-230	-94	-213
- long-term liabilities	-2518	-308	-1034	-415	-180	-627
- current bank loans and short-term financial assistance	-253	-230	-188	-330	-152	-593
- equity capital – profit	-4092	-526	-1387	-497	-3065	-390
Usage in financial activities	**7174**	**1364**	**2797**	**1720**	**3579**	**2250**
Cash flow I.	3989	3220	2522	1961	2715	3736
- short-term receivables	-1164	-565	-1252	-734	-719	-275
- financial accounts	-403	-318	-852	-253	-195	-733
- stocks	-1886	-410	-878	-494	-610	-787
- long-term receivables	-124	-237	-502	-145	-213	-130
- non current asset + depreciation	-3940	-155	-531	-108	-2765	-170
- receivables for subscriptions for equity capital	-12	-13	-227	-1	-4	-1
INTERNAL SOURCES	**11517**	**4919**	**6765**	**3694**	**7221**	**5833**
+ short-term liabilities	1206	1108	625	965	2691	1437
+ current bank loans and short-term financial assistance	179	161	149	240	805	837
+ long-term liabilities	389	213	159	415	240	584
+ long-term loans	156	158	221	197	336	583
+ equity capital – profit	1592	290	1197	4363	1082	1781
EXTERNAL SOURCES	**3522**	**1930**	**2351**	**6180**	**5153**	**5221**
USAGE = SOURCES	**15039**	**6849**	**9116**	**9875**	**12374**	**11054**

Source: Information sheets MP SR and own calculation.

Table 8: Balance composition of cash flow in companies of region Prešov in Skk per ha of agricultural land.

Region/Year	2001	2002	2003	2004	2005	2006
Bratislava	94	144	130	45	92	40
Trnava	70	152	104	81	79	96
Nitra	84	66	107	54	84	82
Trenčín	87	102	72	39	53	99
Žilina	181	217	168	108	63	55

Banská Bystrica	51	103	147	25	59	77
Prešov	129	133	63	94	51	80
Košice	121	113	117	44	95	75

Source: Own calculation.

Table 9: Cash flow I. shared on operating activity in all regions.in %.

The year 2004 was problematic because the cash flow I. decreased in all regions of Slovakia. The companies produced the cash flow I. over 100 % only in the region Žilina. After 2004, cash flow I. showed a variable trend in all monitored regions. The companies couldn't produce cash flow I. over the area of 100 % . It was before the accession of Slovakia into the European Union. The reason of this situation was the increase of bank loans and liabilities in agricultural companies in all regions of Slovakia.

Conclusions

In 2003, owing to opening of price-scissors between inputs and outputs, agriculture of the Slovakian Republic reached a loss. In 2004, there was still an open unresolved question in Slovakian agriculture dealing with the issue of ownership in a cooperative society sector. Operating of companies in this sector was influenced by money insufficiency and that is why the companies did not invest. The financial situation was affected by a financial support gained by Slovakia after its accession into the European Union. Until the May in 2004, the national supplement payment to direct payments was provided to companies and after the accession into the EU, the companies received the rest of payments. It was an off-set time of financial sources for the companies and the companies financed their activities particularly from the internal sources. From external sources, they used bank loans from commercial banks. In 2005, the agricultural companies were considered as solvent bank clients. There was a simplification of cash flow in the sector and the overview of financial use increased. The companies invested more than they did in the previous year (by more than 43 %). Direct payments are going to be a stabilization tool of agricultural companies.

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Comparison of milk production costs among EU members

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Abstract

This paper attempts to identify factors which influence the effectiveness of milk production. The basic aim is to compare levels of costs in the dairy industry between Czech and European producers. The average cost per 100 kg ECM milk is determined from data provided by the European Dairy Farmers association (EDF). The total costs per 1 litre of Czech milk producers are on the European average level with high production efficiency. The problem is only in the utilisation of basic production factors, especially land and labour.

The paper resulted from a contribution to an institutional research project MSM 6046070906 „Economics of resources of Czech agriculture and their efficient use in the framework of multifunctional agri-food systems".

Key words

Milk production, costs, profitability, production factors

Anotace

Příspěvek se zabývá stanovením faktorů, které mají vliv na efektivitu výroby mléka. Základním cílem je komparace úrovně nákladovosti v prvovýrobě mléka mezi českými a evropskými producenty. Je stanoven průměrný náklad na 100 kg ECM mléka v rámci EU, k čemuž jsou využita data členů asociace European Dairy Farmers. Celkové náklady na litr mléka jsou u českých producentů na úrovni evropského průměru při poměrně vysoké produkční efektivnosti. Problémy se objevují pouze ve využívání základních produkčních faktorů, zejména půdy a práce.

Poznatky prezentované v článku jsou výsledkem řešení výzkumného záměru MŠM 6046070906 "Ekonomika zdrojů českého zemědělství a jejich efektivní využívání v rámci multifunkčních zemědělskopotravinářských systémů".

Klíčová slova

Produkce mléka, náklad, ziskovost, produkční faktory

Introduction

Currently the breeders of dairy cattle struggle with a number of problems arising from the cost escalation (especially in feedstuffs and fuel) in the first half of 2008, and from the dramatic fall of milk purchase prices at the turn of 2008/09. Milk purchase prices in 2009 dropped by an average of 30 % throughout Europe compared to 2008, and many farmers are now questioning whether to stay in the sector. Most farmers protested against the current conditions in the milk sector during 2009, when present quotas in milk production will be conserved - and will even be increased by one percent each year until 2015. The European Commission has now ruled out the chances of

quota changes which farmers have been demonstrating for (including the implementation of minimum purchase prices, such as exists on the sugar or potato starch market). It is evident, that under present conditions and with reduced international demand only the most productive farmers will survive in the subsequent competitive market.

The question remains, whether Czech dairy farmers are able to compete in comparison with other dairy farmers in the EU, and if the status quo, when the purchase price of milk is deeply below production costs, is sustainable in the long term, or what might be done to avoid this unfavourable development.

Country	Germany	Denmark	Belgium	United Kingdom	Netherlands	Ireland	France	Italy	Spain
	DE	DK	BE	UK	NL	IE	FR	IT	ES
Number	32	3	15	24	43	16	28	3	18
Country	Luxemburg	Sweden	Austria	Switzerland	Poland	Czech Republic	Slovakia	Ukraine	
	LU	SE	AT	CH	PL	CZ	SK	UA	*TOTAL*
Number	10	9	3	4	26	4	13	4	*255*

Source: EDF data base.

Table 1: The number of respondents from particular European countries.

The aim of the next analysis is to provide a comparison of utilisation of production factors and costs in milk production among European countries and to highlight the problematic points which are especially crucial for Czech milk producers. Total milk yields relating to the level of costs and to milk purchase prices are also discussed.

The Institute of Animal Science, Prague, has been concerned in the long term with the economic effectiveness of dairy cattle breeding [Kvapilík (2008); 6]; this author also considers the questions of milk purchase prices [7]. The norms for agricultural production including cost limits are prepared by composite authors from the CULS Prague [Kavka (2008); 4].

Other authors from the Institute of Agricultural Economics and Information, Prague, developed studies which look at the profitability of milk production including a subsidy [Poláčková (2009); 9], [Kopeček (2009); 5], [Foltýn et al. (2009); 3], [Foltýn et al. (2008); 2] and [Novák(2009); 8]. The studies mentioned above were made between years 2002 – 2008.

Material a methods

The methods of comparative analysis and break-even point analysis were used to fulfill the basic aim. The correlation analysis was utilised for a formulation of dependence between land productivity and land rent.

Data was obtained from questionnaires from the European Dairy Farmers association (EDF) among 255 dairy farmers (producers) from 17 European countries. The processed data provided results for 2008, and so it is necessary to approach them from the viewpoint of cost and price developments in the last year as far as it is mentioned in introduction. The EDF methodology uses accounting data integrated with so-called "Opportunity costs" (a valuation of own (self)-costs) – especially in the case of family farms where the work of family members and valuation of owned land is added. For Czech farms (large PLC´s) these costs are on a low level and its value is 3.5 € / 100 kg of milk. The costs are calculated for the whole company including costs of calves and heifers.

Not only the sales of milk, but also animal sales and subsidies (direct payments bonded to production and decoupled payments) are included in returns. The exchange rate of the Czech crown against the Euro was taken from the end of April 2009, when the questionnaires were distributed, when it was 26.71 CZK per 1 €. The values referred below are usable rather as an orientation review of the Czech milk producer situation within the EU because there are only 5of the monitored countries) and only 4 farms provided data. A better view is given by a comparison of central European countries – the Czech Republic and Slovakia – together. They have similar types of companies and similar technologies. A summary of the number of respondents is shown in table 1.

Results and discussion

In the table 2, the milk production in the Czech Republic (CR) is summarised in a time series. It is significant to observe the rise of milk yield per cow and year (MYPCY) from 2003 to 2008 by about 1,020 litres. The MYPCY achieved in 2008 (6,776 litres, i.e. approx. 6,959 kg) is higher than the average milk yield in the EU-15 in the same year. The increase of the average milk purchase price in the first quality class of to 8.45 CZK/l (0.34 €/l) in 2008 has been seen positively and is the highest average price in the period since the accession to the EU.

	unit	2003	2005	2006	2007	2008	differ. 08-07
Dairy cows	thous.	460	438	423	410	**403**	**-7**
Daily milk yield	l/cow	15.77	17.13	17.45	17.94	**18.51**	**+0.57**
Yearly milk yield	l/cow	5,756	6,254	6,370	6,548	**6,776**	**+228**
Milk production	mil. l	2,646	2,739	2,694	2,684	**2,728**	**+44**
Market milk prod.*	mil. l	2,531	2,613	2,612	2,619	**2,596**	**-23**
Market share	%	95.7	95.4	97.0	97.6	**95.2**	**-2.4**
Milk purchase price**	CZK/l	7.83	8.31	7.83	8.37	**8.45**	**+0.08**

*) deliveries and direct sales (in 2003 - 2007 by State Agriculture Intervention Fund - SAIF, year 2008 Czech Statistical Office - CSO).
**) average milk purchase price of first class milk.
Source: CSO – beef breeding, Ministry of Agriculture – departmental statistics, SAIF – milk quotas[6].
Table 2: Characteristics of milk production in the CR.

The all Czech respondents in the EDF net were joint stock companies. The average land area is 2,770 ha there, and 90 % of leased land is from that. The returns from milking activities reached about 44 % of all firms' returns. The MYPCY in the monitored Czech companies is between 8,000 and 13,000 kg of energy corrected milk (ECM1). On the other hand, the average value of all countries involved in the EDF net is 412 ha of land area with 52 % of leased land and with 78 % share of milk returns in the total returns of a firm. The average MYPCY in the EDF net was 7,979 kg of milk.

Concerning the total costs of milk production, the average costs of the farms associated with the EDF were 41.9 € per 100 kg of ECM in 2008. The Czech Republic is just under this figure (41.7 €, i.e. 10.55 CZK/l with fat content of 4.01 % and protein content of 3.35 % - according to the laboratories of the Czech and Moravian Association of Breeders – CMAB [6]).

The lowest values of total costs were in the U.K. (34.1 €) followed by Poland (34.4 €) and Ireland (34.8 €). At the other extreme, the highest total costs were estimated in Switzerland with 62 € per 100 kg of ECM, followed by Austria (59 €; see figure 1). A similar survey, taken in the worldwide net of the IFCN (International Farm Comparison Network) for 2007 [1] showed a range of total costs in the EU of between 45 $ - 58 $ per 100 kg of ECM (33 – 42.4 €/100 kg).

In terms of cost classification, the CR exceeds the all-European average in feedstuff purchase – the figure is 157 % against the EDF average (14.4 € per 100 kg of ECM). The next important item is wage

payments (6.4 €) which exceeds the EDF average by approximately 2.7 times. The valuation of work of family members is zero due to the legal form of Czech companies – and the same situation exists in Slovakia and Ukraine. As a result of the lower milk production, as well as increase of the milk quota in spring of 2008 and not reaching the quota for this year, the quota costs almost reached a zero level (0.2 €) where the EDF average is on the level of 1.8 € per 100 kg of ECM.

If we were to compare the results of the EDF cost survey with similar surveys taken in the CR, we would have only calculated the accounting costs – they are used only in Czech methodologies – and have deducted opportunity costs. We then obtain the total costs on the level of 38.2 € per 100 kg of ECM which is approximately 9.66 CZK/l. Subsequently, we get a range of total costs throughout 2008 of between 8.83 CZK/l according to Burdych (in Yearbook of Cattle Breeding – YBCB [6], and 9.66 – so an interval of 0.83 CZK (see the figure 2). From the figure it is seen that somewhere from June 2008 the milk production is unprofitable.

In September 2009, the average EU-25 milk price stood at 26.24 €/100kg (see table 3). This was an increase of 3.3 % (0.85 €/100kg) when compared to the average price in August 2009. Annual comparisons show that the EU-25 average price fell by 8.90 € (25.3 %) from 35.14 €/100kg in September 2008. In September 2009. there were sixteen EU countries that had a higher average price than the Czech Republic, including Italy, France, United Kingdom and Denmark. Between August and September. all EU-25 counties saw a rise in their average price, with the exception of Germany and the CR.

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[1] ECM = (0.327 x lb of milk) + (lb of fat x 12.95) + (lb of protein x 7.2)
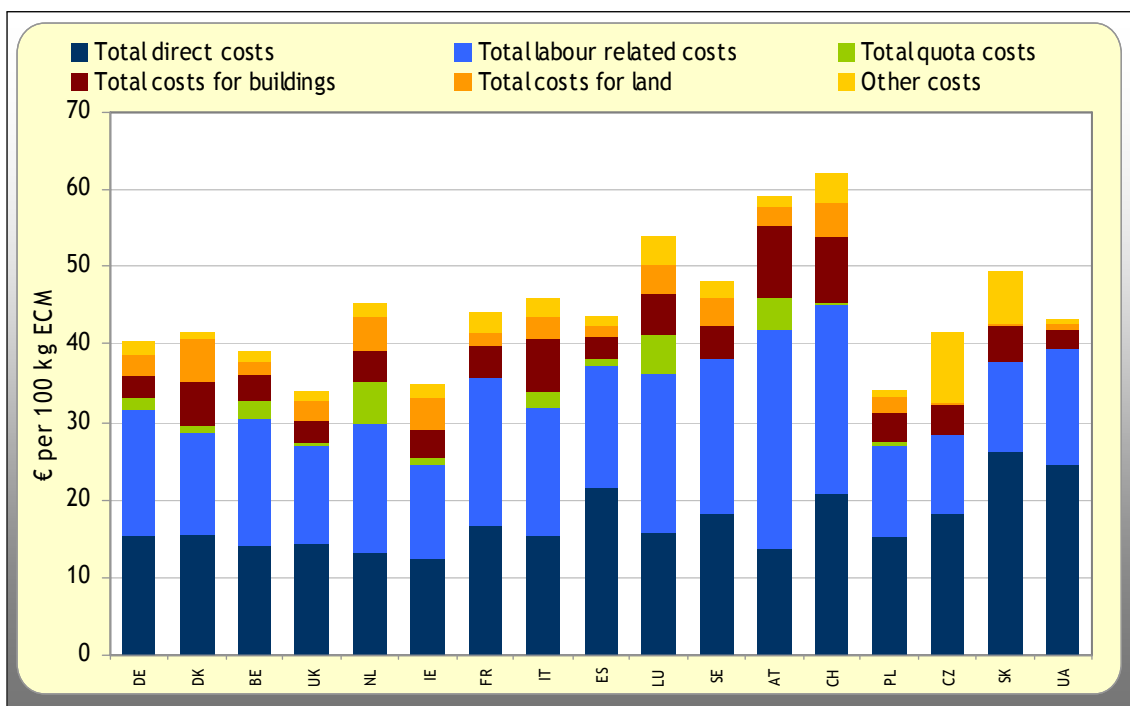
Source: EDF data base

Figure 1: Structure of costs of the dairy enterprise.
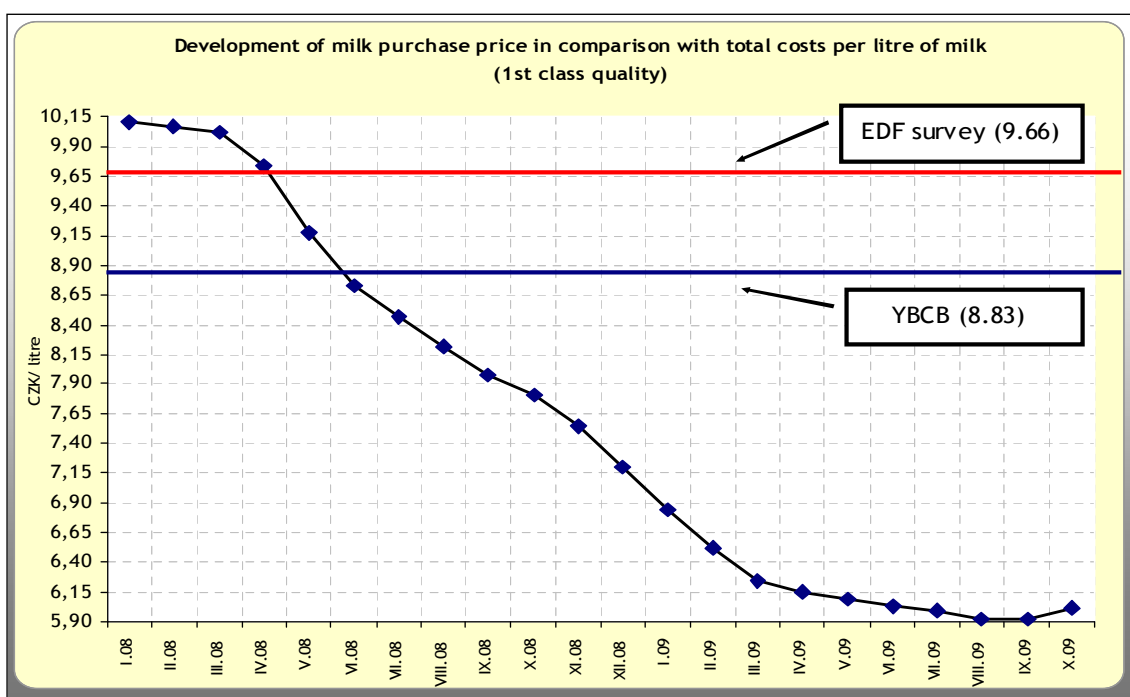
Source: CSO, YBCB, EDF data base

Figure 2: Comparison of costs vs. milk purchase price.

	€ / 100 kg	Relation to Average EU 25		€ / 100 kg	Relation to Average EU 25
Cyprus	52.84	201.4%	Slovenia	24.41	93.0%
Finland	39.59	150.9%	Belgium	23.48	89.5%
Greece	36.75	140.1%	**Czech Rep.**	**23.00**	**87.7%**
Italy	31.02	118.2%	Poland	22.73	86.6%
France	30.42	115.9%	Germany	22.07	84.1%
Netherlands	28.06	106.9%	Hungary	21.28	81.1%
Spain	27.90	106.3%	Slovakia	20.96	79.9%
Portugal	27.40	104.4%	Estonia	19.77	75.3%
Sweden	27.26	103.9%	Lithuania	16.50	62.9%
United Kingdom	26.83	102.2%	Latvia	16.44	62.7%
Austria	26.14	99.6%	Malta	c	c
Ireland	25.02	95.4%	**Average EU 10**	**24.21**	92.3%
Luxembourg	24.69	94.1%	**Average EU-15**	**28.08**	107.0%
Denmark	24.50	93.4%	**Average EU 25**	**26.24**	**100.0%**

Source: DG Agri (http://www.dairyco.net/market-information/dg-agri.aspx) , c - confidential

Table 3: Milk purchase prices in September 2009 (EU 25).

The figure 3 represents an income from operations. The average milk purchase price in 2008 is compared to the "break-even point II" (BEP II.[2]).

From the results it can be seen that in spite of higher milk prices at the beginning of 2008, the average milk purchase price (in the Czech conditions it was about 33 €/100 kg of ECM) could not cover all economic costs of production. Break-even point II was on the level of 34.2 €/100 kg of ECM. As closely as the accounting costs are calculated and the opportunity costs are deducted, 30.9 €/100 kg is obtained which is the "BEP I", and this is below the milk purchase price mentioned above.

In summary, the total income including all subsidies was on a very low level of only 0.4 €/100kg of ECM (the EDF average was 2.6 €) but without subsidies it was negative as well as the EDF average. From European countries, the negative income from operations (also without subsidies) was then in Luxemburg, Austria, Switzerland and Slovakia. It corresponds to outputs of Foltýn [3] who evaluates an impact of the agrarian policy and submits that in an average formulation the milk production profitability in the CR without subsidies was negative after 2004 and that only subsidies helped the income into positive figures.

If we consider the differences in farming among single member states in more detail, we must take note of the lower labour productivity which is about 8% less in the CR than in the EDF average, and is 172 kg of ECM per 1 hour of work. In comparison to the Netherlands, it is roughly a third less, and in comparison of Denmark it is almost a half less (see figure 4). In these countries, the total requirement of labour per one cow is about 30 hours yearly compared to 58 hours in the Czech Republic. The lowest labour productivity was in Slovakia, Ukraine and Poland (with 72, 81 and 83 kg/hour, respectively), with the labour requirement of more than 100 hours per cow yearly.

A comparison of capital productivity is also interesting, the Czech Republic has 2,377 kg of ECM per 1,000 € of total asset (machinery, buildings, shares in other companies etc.), 30 % above the EDF average.

The land productivity relates directly to the land price and is especially high in places where the land price is also high. It refers above all to Italy and Spain where the figures of land productivity are the highest and varies above 20 tons of ECM per hectare, which is considerably larger than the EDF average (12.8 t ECM/ha). With regard to large managed areas, the Czech Republic has this

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[2] BEP II = total costs (without quota cost) – total returns + returns from milk sales. The number represents milk price to cover full economic costs, equal to total economic costs of milk production, without consideration of quota costs.

productivity on a level of two thirds of the EDF average. There is also a visible dependence between the values of land rent (which corresponds with the real land price) and milk production per hectare of grazing area. There could be an estimation that with the rising price of this production factor, the milk production per unit also rises, so that a land user tries to maximise its utilisation (see figure 5). This relationship is best described by a multiplicative function with the dependence about 44 % and is characterised by the formula: y = 374.99x0.5926 (see figure 6).

It is also necessary to mention some other indicators of milk production, for example the parturition interval which is 413 days in Czech conditions (about 12 days longer than average) and it is the second highest after Spain (425 days). At the other extreme, the lowest figure for this indicator can be observed for Belgian cows, with 362 days. Additional factors include the cow culling rate which is about 35 % in our conditions and is also the highest figure among EDF members but similar to figures observed in Slovakia and Sweden. The lowest values of cow culling rate are traditionally seen in Ireland (15 %) and Switzerland (19 %).
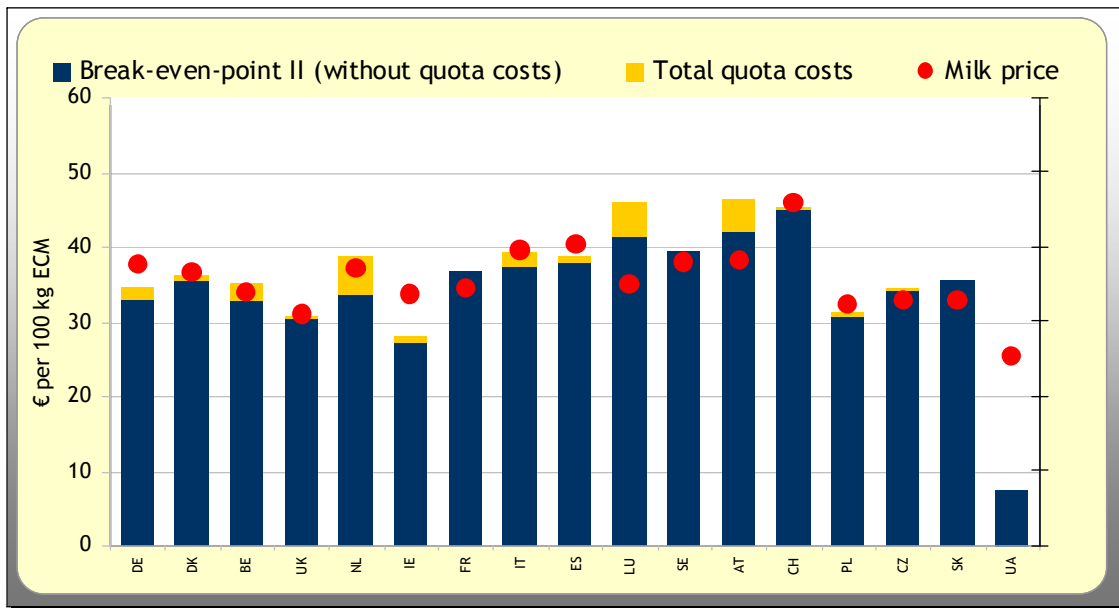
Source: EDF data base

Figure 3: Costs in relation to returns in milk production (2008).
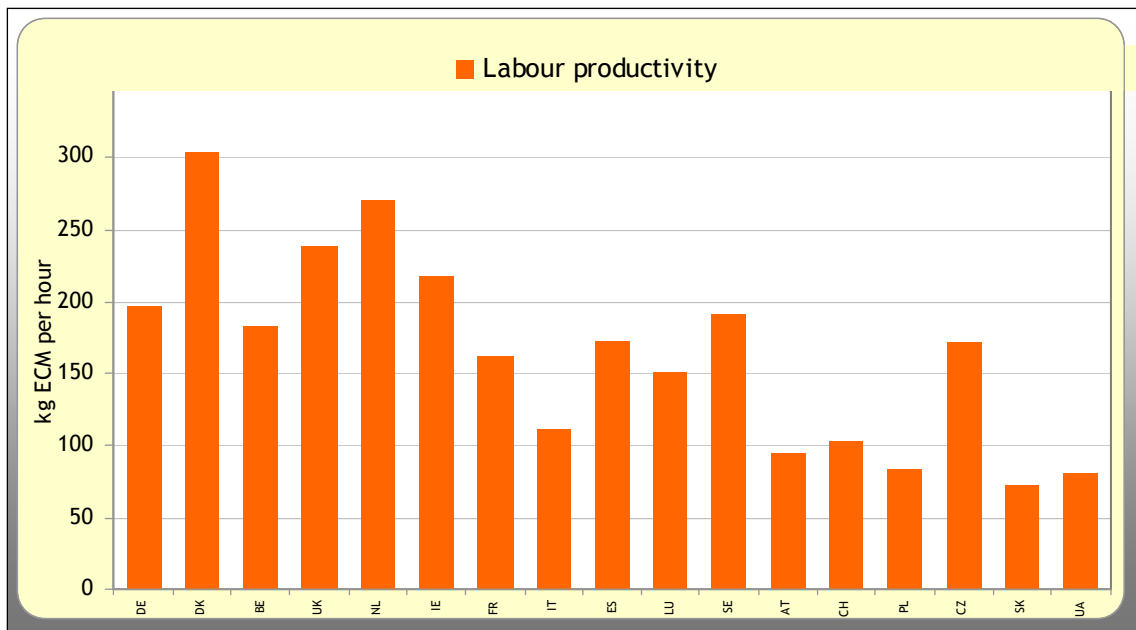
Source: EDF data base

Figure 4: Milk production per 1 hour of work.
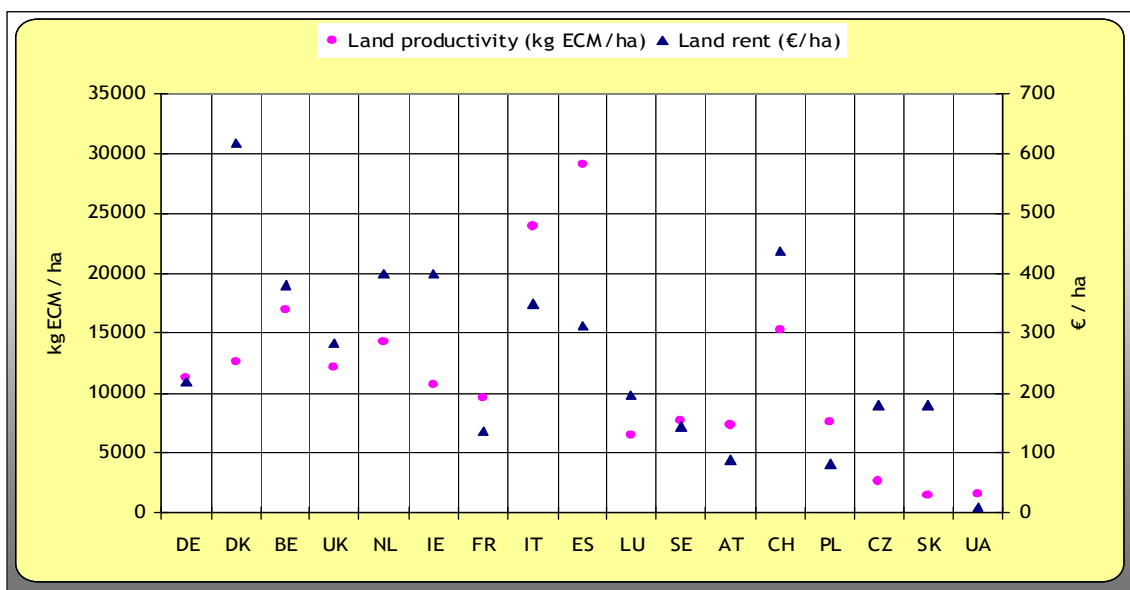
Source: own calculations on the base of EDF data

Figure 5: Land productivity and land rent price in the EDF countries.

```
Regression Analysis – Multiplicative model: Y = a*X^b
-------------------------------------------------------------------------------
Dependent variable: Productivity
Independent variable: Rent
-------------------------------------------------------------------------------
                            Standard          T
Parameter       Estimate       Error      Statistic        P-Value
-------------------------------------------------------------------------------
Intercept        5,9269       0,920112      6,4415          0,0000
Slope            0,592567     0,171516      3,45488         0,0035
-------------------------------------------------------------------------------

NOTE: intercept = ln(a)

                        Analysis of Variance
-------------------------------------------------------------------------------
Source          Sum of Squares   Df   Mean Square    F-Ratio     P-Value
-------------------------------------------------------------------------------
Model               5,12861       1     5,12861       11,94       0,0035
Residual            6,44503      15     0,429668
-------------------------------------------------------------------------------
Total (Corr.)      11,5736       16

Correlation Coefficient = 0,665679
R-squared = 44,3129 percent
Standard Error of Est. = 0,655491
```

Calculations with decimal comma.

Source: own calculations on the base of EDF data

Figure 6: Statistical characteristics of the dependence between land productivity and rent.

With regard to the milk performance, the CR is at the top of milk production together with Denmark and Sweden. The average figure of MYPCY in these countries is above 9,000 kg of ECM. In this calculation, it is also necessary to include the amount of concentrated feedstuff used for the production of 1 kg of milk which particularly influences the costs (especially in 2008). While in Sweden the intake of concentrated feed was over 10 kg per cow and day on this type of feedstuff for a 78 % share of total milk production, in Czech farms it was only 5.7 kg with a 42 % share of total milk production. The concentrated feedstuff consumption also relates to the high price of land, where for example, for Italian farmers it is cheaper to buy feedstuffs from other sources, and its share

in total production is comparable to Sweden – 77 %. Czech producers have then a range for optimisation of quality and quantity of feedstuffs. On average, the concentrated feedstuffs in member states of the EDF took a share of 58 % in the total milk production. This was also influenced to a large extent by the feed prices which were twice as high as the EDF average in Czech conditions.

Synthesis of results and conclusion

(i) In comparison to other EU countries, Czech milk producers do not lag behind in terms of the production intensity. With a relatively high milk yield they have reached the European average for the total level of costs per litre of milk. The main problem remains the basic production factors – especially labour and land. A lower labour efficiency in the CR is compensated by the low price of labour, lower land productivity, and by the lower costs of land (a rent price). The capital efficiency is at a relatively good level, apart from machinery usage. The perspectives of Czech producers are, therefore, in increasing labour and land productivity.

(ii) As regards to milk purchase prices, there was some recovery in global demand towards the end of 2009, together with a slight increase of purchase prices. It may be considered that in 2010 prices will become stabilised at a level of between 8 and 9 CZK/l, which, given the low prices of inputs (fuel, energy and feed) in 2009 and its projected stagnation in 2010, could be sufficient to cover the cost of production.

(iii) Given the current increase in production quotas and their subsequent elimination in 2015, it may be expected that the milk prices will fluctuate more often due to a sector liberalisation and the influence of global supply and demand for this commodity..

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The influence of official development assistance on economical development of the selected groups of developing countries around the world

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Abstract

The current financial crisis influenced the whole economy around the world. Almost all sectors of human activities and all countries are affected by its impacts. While in the past all kinds of crises had an effect on developing countries and in case of developed countries only selected sectors of the national economy were involved, the current crisis, which started in the second half of 2008, seriously affected not only developing countries but also developed countries. During the last several decades, we became witnesses of a permanently increasing gap between developing and developed countries. While only few developed countries with about 1.2 billion people produced about 80 % of the world GDP, the rest of the world represented by developing countries with about 5.8 billion people produced only 20 % of the world GDP. Many different ideas were proposed to improve the situation in case of developing countries and to eliminate the gap between the rich "North" and the poor "South". All initiatives are based on a cooperation between developed and developing countries. This cooperation is based not only on the economical and political cooperation, but also on a very intensive developing aid provided by developed countries and international institutions. The aid is offered in many forms (financial, food or development aid). The main aim of our paper is to evaluate the value and flows of possible forms of aid which were offered to developing countries in the period before the financial crisis and the next step is to estimate how the current financial crisis affects developing aid flows.

Key words

Aid, development assistance, economic growth, developing countries.

Anotace

Současná finanční krize ovlivnila ekonomiku celého světa. Téměř veškeré sektory lidské činnosti a většina zemí byly a jsou ovlivňovány jejími dopady. Zatímco v minulosti většina krizí dopadla zejména na rozvojové státy a v případě vyspělých ekonomik pouze některé sektory národní ekonomiky byly postiženy, současná krize, která s plnou silou odstartovala v druhé polovině roku 2008, velmi výrazně dopadla jak na země vyspělé, tak i na země rozvojové. Během několika posledních dekád jsme se stali svědky kontinuálně se zvětšující mezery mezi vyspělými a rozvojovými zeměmi. Zatímco několik málo vyspělých zemí představujících 1,2 miliardy světové populace generuje 80% světového HDP, zbytek světa představující více než 5 miliard lidí generuje pouze 20% světového HDP. Během posledních let bylo navrženo mnoho přístupů za účelem zlepšení postavení rozvojových zemí zejména za účelem eliminace rozdílů mezi bohatým „Severem" a chudým „Jihem". Veškeré iniciativy jsou postaveny na ekonomické a politické spolupráci mezi rozvojovými a vyspělými zeměmi. Rozvojová spolupráce probíhá v mnoha formách (např. finanční, potravinová a rozvojová pomoc). Hlavním cílem našeho článku je zhodnotit hodnotu a toky vybraných forem rozvojové pomoci, které byly poskytovány vyspělými zeměmi zemím rozvojovým v období před krizí a následně analyzovat jak současná krize ovlivnila toky rozvojové pomoci.

Klíčová slova

Pomoc, rozvojová spolupráce, hospodářský růst, rozvojové země.

Introduction

Since the success of the Marshal Plan in the reconstruction of the Europe at the post-war period, nobody doubts the significance of development aid. This aid was the corner stone of prosperity of the original member states of the European Union. Due to that, many authors take in consideration the importance of the development assistance for underdeveloped nations and also the synergic effect on the overall economy. Another exceptionally successful example is Korea. However, the development aid has also some failures, it is necessary to mentioned the problem of a former Democratic of Congo (originally Zaire) when due to the massive flow of foreign aid, the personal income and possession of head of the state has increased enormously.

There are many official definitions of the aid and also different kinds of help. When we are talking about aid, we also have to distinguish between the official development assistance and the official development finance as well as between development aid, humanitarian aid, technical aid etc. The World Bank (1998) defines the official development assistance as a subset of the official development finance and comprises grants plus concessional loans that have at least a 25 percent grant component.

Another definition is by the World Health Organisation: "Development aid or development cooperation (also development assistance, technical assistance, international aid, overseas aid or foreign aid) is aid given by governments and other agencies to support the economic, social and political development of developing countries. It is distinguished from humanitarian aid as being aimed at alleviating poverty in the long term, rather than alleviating suffering in the short term".[3]

For better understanding of the text we are going to use the term aid instead of distinguishing between the development assistance and finance.

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[3] W.H.O. glossary of terms, "Development Cooperation" Accessed 25 January 2008 (and still there in 2009!)

Ones of the very first authors, who tried to deal with the impact of aid to economic growth, were Harrod and Domar with the well known growth model based on savings and capital. Boone (1995) used the growth model in the connection of the public choice under alternative political regimes. His conclusion is rather alarming. His output shows that there is no connection between aid and economic development due to the absent relation between poverty and capital shortage; the second reason is the unwillingness of politicians to change the policies when they have guaranteed amount of aid.

Lensink and White (2001) oppose to the outcomes of the World Bank (1998) that the aid is more effective, if the country has a good policy.

Probably one of the most important studies in the field of measurement of the development aid was done by Burnside and Dollar (1997 and 2000). They used the growth regression to show that the foreign aid has an insignificant effect in countries which have poor macroeconomic policies and, on the other hand, it leads to economic growth in countries which are capable of managing their macroeconomic policies well. Their model was often used and also criticized by many authors though it is rather difficult to test this presumption on cross country data. Many authors based their research on the above mentioned model. Ones of them are Hansen and Tarp (2000) whose found out that it is the diversity of developing countries in their natural endowments and cultural and socioeconomics characteristics which play one of the most important role in the output of the regression. Abegaz (2005) dealt with three different models of development aid and their application to African Sub-Saharan countries. His conclusion belongs between the straightforward ones. He stresses the importance of good governance and strong partnership between the donors and recipients. Another question is the influence of international organizations which are in same way responsible for the development. Dreher, Sturm an Vreeland (2008) tried to find an answer on the question, if the World Bank decision can be influence by UN membership. They concluded that the World Bank does not fulfill its role to promote development and economic growth. They

emphasized the fact that these institutions are mostly driven by their major shareholders and due to that the used tools are mostly just extended hand of the largest states. This output supports the idea of Friedman (1958) who was strictly against the development aid because of this idea "the donors always use the aid to win allies". This idea was expanded by Balla and Reinhardt (2008) who employ conflict as a measure of a donor's interests. Their findings show that there are some countries (such as Scandinavian countries) which try to protect neighbours instead of giving aid to the country of conflict.

Net Disbursement - Official development assistance	Value of ODA				Share in total ODA			
	Constant Prices (2007 USD millions		Current Prices (USD millions)		Current Prices (USD millions)		Constant Prices (2007 USD millions)	
	1960	2008	1960	2008	1960	2008	1960	2008
All donors	36 345	113 999	4 676	119 759	100.00 %	100.00 %	100.00%	100.00%
G7	34 015	77 763	4 460	80 815	95.40%	67.50%	93.60%	68.20%
All donors – bilateral ODA	31 217	81 241	4 094	85 187	87.60%	71.10%	85.90%	71.30%
G7 – bilateral ODA	29 506	55 726	3 932	57 769	84.10%	48.20%	81.20%	48.90%
All donors – multilateral ODA	5 129	32 758	582	34 572	12.40%	28.90%	14.10%	28.70%
G7 – multilateral ODA	4 509	22 037	528	23 046	11.30%	19.20%	12.40%	19.30%
Australia	531	3 038	59	3 166	1.30%	2.60%	1.50%	2.70%
Austria	1	1 555	2	1 681	0.00%	1.40%	0.00%	1.40%
Belgium	1 016	2 214	101	2 381	2.20%	2.00%	2.80%	1.90%
Canada	440	4 577	65	4 725	1.40%	3.90%	1.20%	4.00%
Denmark	74	2 570	5	2 800	0.10%	2.30%	0.20%	2.30%
Finland	18	1 047	2	1 139	0.00%	1.00%	0.00%	0.90%
France	8 028	10 168	823	10 957	17.60%	9.10%	22.10%	8.90%
Germany	2 616	12 994	224	13 910	4.80%	11.60%	7.20%	11.40%
Italy	986	4 059	77	4 444	1.60%	3.70%	2.70%	3.60%
Japan	1 368	8 310	105	9 362	2.20%	7.80%	3.80%	7.30%
Netherlands	519	6 522	35	6 993	0.80%	5.80%	1.40%	5.70%
New Zealand	86	355	9	346	0.10%	0.30%	0.00%	0.30%
Norway	73	3 638	5	3 967	0.10%	3.30%	0.20%	3.20%
Sweden	58	4 508	7	4 730	0.10%	3.90%	0.20%	4.00%
Switzerland	56	1 794	4	2 016	0.10%	1.70%	0.20%	1.60%
United Kingdom	4 862	12 217	407	11 409	8.70%	9.50%	13.40%	10.70%
United States	15 716	25 439	2 760	26 008	59.00%	21.70%	43.20%	22.30%

Source: WDI, OECD, own processing

Table 1: The main donors and the value of ODA.

	Current Prices (USD millions)		Constant Prices (2007 USD millions)	
	Absolute change 1960/2008	Average inter annual growth rate - 1960-2008	Absolute change 1960/2008	Average inter annual growth rate - 1960-2008
DAC Countries	2461.3%	7.5%	213.7%	2.7%
G7	1712.1%	6.8%	128.6%	2.1%
Australia	5275.6%	10.1%	472.1%	4.8%
Austria	55933.3%	20.7%	4102.1%	14.2%
Belgium	2259.4%	8.7%	117.8%	2.9%
Canada	7183.9%	11.1%	940.5%	6.5%
Denmark	52730.6%	15.5%	3352.5%	8.6%
Finland	56856.0%	18.9%	5716.9%	12.5%
France	1231.2%	6.5%	26.7%	0.9%
Germany	6123.8%	10.1%	396.8%	4.0%
Italy	5701.0%	16.0%	311.6%	9.0%
Japan	8807.8%	12.6%	507.6%	5.7%
Netherlands	19708.8%	13.3%	1156.4%	6.5%
New Zealand	4229.0%	9.5%	312.8%	3.9%
Norway	76192.1%	16.2%	4869.2%	9.3%
Sweden	70494.6%	16.8%	7667.8%	11.1%
Switzerland	57493.7%	17.7%	3075.9%	10.2%
United Kingdom	2704.5%	8.3%	151.3%	2.9%
United States	842.4%	6.6%	61.9%	2.7%

Source: WDI, OECD, own processing

Table 2: Change in ODA between the years 1960 and 2008.

Claessens, Cassiomn and Van Campenhout (2009) observed that most of donors really care about potential recipients as their results show that the biggest group of recipients belongs to the group of the lowest income level countries. This means that poorer countries receive more aid. A problem of this tendency is the growing dependency on the aid. Many countries calculate with the aid but they cannot use it efficiently because mostly long term aid agreements do not exist here and owing to that the aid cannot be used for a long term planning. Eifert and Gelb (2008) tried to find a solution for an unstable aid and how to deal with it. They came with a proposal based on a performance-based allocation rule on a year-to year basis. Minoiu and Reddy (2009) divided the development aid into two main parts; a development component which consists of growth-promoting expenditures, and a non-development component which includes other expenditure. They sought to find an effectiveness of the aid. They proved that some expenditures promote growth while the others have no impact on the economic development. Torsvik (2005) used Nash equilibrium and showed that a cooperation among donors increase the effectiveness of the given aid.

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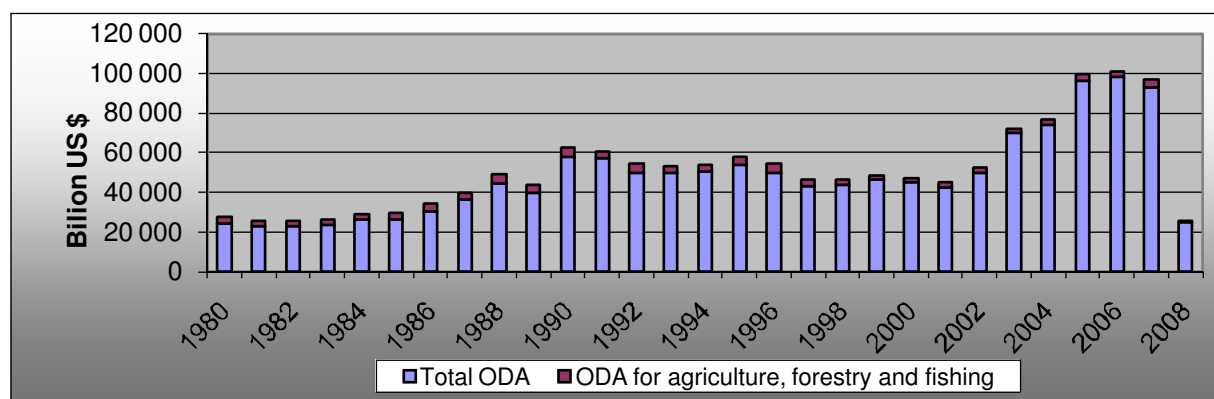
Graph 1.
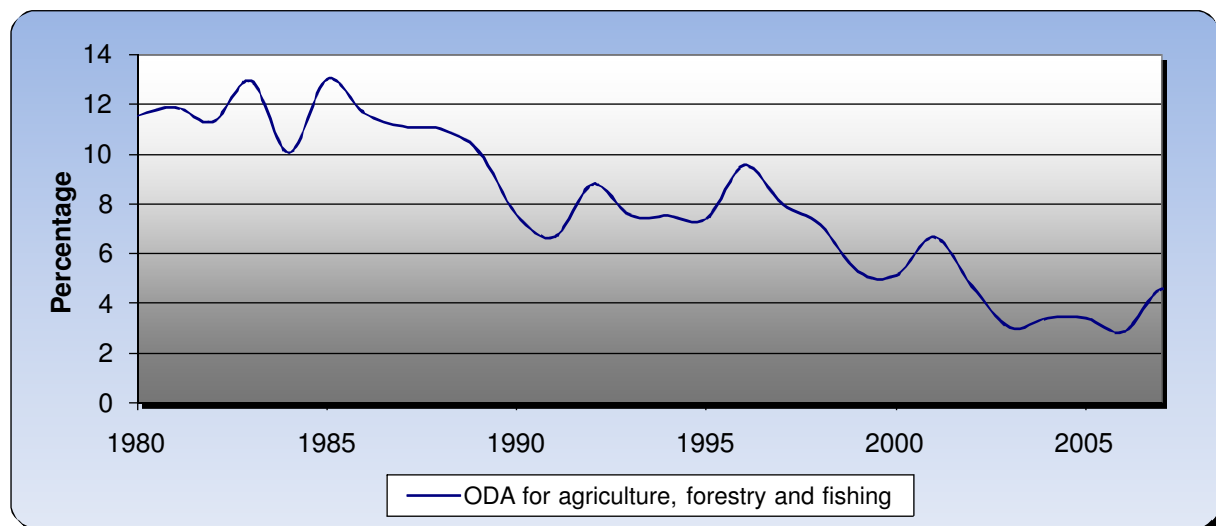
Graph 2.

The question is, if the received aid has just a positive aspect, or if we can find some negative evidence as well. One of them was introduced by Nyoni (1998) who modelled the influence of foreign aid on exchange rates in Tanzania. His results show that the currency of receiving country can also depreciate under some conditions.

Aim and methodology

The main aim of the paper is to analyse an official development assistance (ODA). The paper tries to analyse the main development trends which appeared in the last five decades. The main targets of the analysis are donors of developing aid – DAC (development assistance committee) members - and on the other hand, the main developing aid recipients – mainly the least developed countries. The paper is going to find out how the official development assistance influenced the main recipients' economies, and in contrast, also the ability of developed countries to provide the developing aid. The paper also analyses a relationship between donors, respectively GDP development and ODA value of recipient countries provided, respectively received. The main idea is to find out, if any relationship between ODA and GDP exists, both in case of the developed countries and the developing countries.

For the purpose of our analyses we decided to analyze the relationship between GDP and ODA. All data for the analyses were conducted in current and constant prices. The fundamental data come from OECD database and WDI database. We used a regression analysis as the basic analytical methods,

an elasticity analysis and a basic and chain indices analysis. We also used a linear regression analysis.

From where to whom and the basic data about aid

Most of the development aid comes from the Western industrialized countries but some poorer countries contribute aid, too. The aid may be bilateral: given from one country directly to another; or it may be multilateral: given by a donor country to an international organization such as the World Bank or the United Nations Agencies (UNDP, UNICEF, UNAIDS, etc.) which then distributes it among the developing countries. The proportion is currently about 70% bilateral 30% multilateral. About 80 to 85 per cent of development aid come from government sources. The remaining 15 to 20 per cent come from private organizations such as "Non-governmental organizations" (NGOs) and other development charities (e.g. Oxfam). This is not counting remittances by individuals in developed countries to family members in developing countries.[4]

The official development assistance or the official aid from high-income members of the OECD are the main source of official external finances for the developing countries, but the official development assistance (ODA) is also disbursed by some important donor countries which are not members

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[4] OECD Stats. Portal >> Extracts >> Development >> Other >> DAC1 Official and Private Flows. Retrieved April 2009.

(USD millions)	1960	1970	1980	1990	2000	2007	ABSOLUTE CHANGE
Africa (CuP)	1 315	1 681	10 422	25 077	15 577	38 550	2831.70 %
America (CuP)	222	1 026	2 242	5 233	4 850	6 842	2983.10 %
Asia (CuP)	2 170	3 338	13 614	17 998	15 950	35 267	1525.20 %
Developing Countries (CuP)	4 255	6 838	33 426	56 959	49 877	105 284	2374.40 %
Developing Countries unspec. (CuP)	140	351	4 927	5 854	8 968	19 153	13569.20 %
Europe (CuP)	385	179	1 198	1 424	3 716	4 175	985.60 %
Oceania (CuP)	23	264	1 023	1 373	816	1 296	5478.60 %
Africa (CoP)	12 143	11 174	23 676	37 179	23 167	38 550	217.50 %
America (CoP)	1 612	5 680	5 061	7 680	6 702	6 842	324.40 %
Asia (CoP)	14 924	18 999	30 842	25 330	20 138	35 267	136.30 %
Developing Countries (CoP)	32 702	40 754	75 893	82 935	69 800	105 284	221.90 %
Developing Countries unspec. (CoP)	1 075	1 999	11 314	8 699	12 758	19 153	1681.90 %
Europe (CoP)	2 736	1 179	2 663	1 961	5 814	4 175	52.60 %
Oceania (CoP)	213	1 723	2 336	2 086	1 221	1 296	508.40 %

Notice: CuP – current prices

 CoP – Constant prices (2007 USD)

Source: WDI, OECD, own processing

Table 3: ODA Total - All Donors - Net disbursements.

Constant Prices (2007 USD millions)			Current Prices (USD millions)		
	1960	2007		1960	2007
Europe	8.37%	3.97%	Europe	9.04%	3.97%
Africa	37.13%	36.62%	Africa	30.90%	36.62%
North of Sahara	18.76%	3.02%	North of Sahara	16.86%	3.02%
South of Sahara	18.34%	32.38%	South of Sahara	14.02%	32.38%
America	4.93%	6.50%	America	5.22%	6.50%
North & Central America	1.81%	3.30%	North & Central America	1.88%	3.30%
South America	1.84%	2.72%	South America	2.31%	2.72%
Asia	45.63%	33.50%	Asia	51.00%	33.50%
Far East Asia	16.39%	6.84%	Far East Asia	19.50%	6.84%
South & Central Asia	22.64%	12.24%	South & Central Asia	24.82%	12.24%
Middle East	6.55%	13.52%	Middle East	6.64%	13.52%
Oceania	0.65%	1.23%	Oceania	0.55%	1.23%
Developing Countries unspec.	3.29%	18.19%	Developing Countries unspec.	3.29%	18.19%

Source: WDI, OECD, own processing

Table 4: ODA Total - All Donors - Net disbursements in %.

of OECD's Development Assistance Committee (DAC). DAC has three criteria for ODA: it is undertaken by the official sector; it promotes economic development or welfare as the main objective; and it is provided on concessional terms, with a grant element of at least 25 percent on loans (calculated at a 10-percent discount rate). Official development assistance comprises grants and loans, net of repayments, that meet the DAC definition of ODA and are made to countries and territories on of the DAC list of aid recipients. The new DAC list of recipients is organized on more objective needs-based criteria than its predecessors, and includes all low- and middle-income countries, except those that are members of the G8 or the EU (including
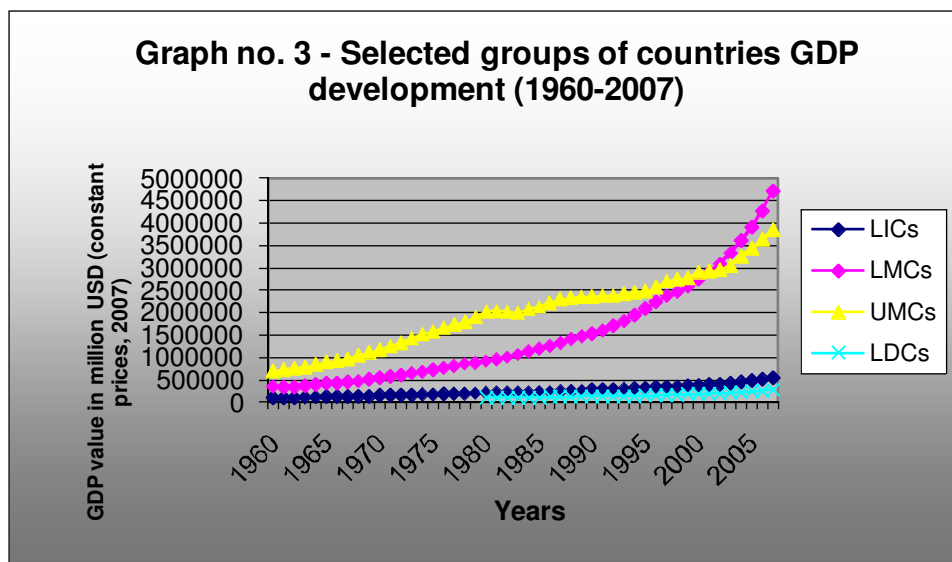
Graph 3.
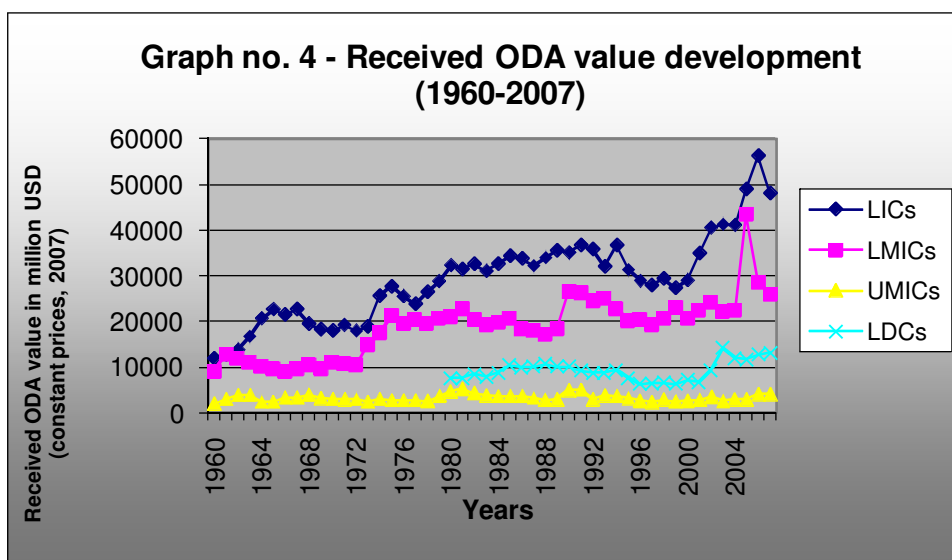
Graph 4.

countries with a firm date for EU admission). (Source OECD).[5]

In 2008, total net official development assistance (ODA) from members of the OECD's Development Assistance Committee (DAC) rose by 10.2 % in real terms to USD 119.8 billion. This is the highest dollar figure ever recorded. It represents 0.30% of members' combined gross national income. The largest donors in 2008, by volume, were the United States, Germany, the United Kingdom, France and Japan. Five countries exceeded the United Nations target of 0.7% of GNI: Denmark, Luxembourg, the Netherlands, Norway and Sweden. The largest volume increases came from the United States, the

United Kingdom, Spain, Germany, Japan and Canada. In addition, significant increases were recorded in Australia, Belgium, Greece, New Zealand and Portugal.[6]

During the last few decades, the value of official development assistance, which is provided by developed countries (especially OECD members) to developing countries, increased significantly. The following figure 1 illustrates the official development assistance value development in the period 1980-2007 which is provided by OECD countries.

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http://www.oecd.org/document/35/0,3343,en_2649 _34487_42458595_1_1_1_1,00.html

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http://www.oecd.org/document/35/0,3343,en_2649 _34447_42458595_1_1_1_1,00.html

During the last almost thirty years, the value of official development assistance, which is provided by OECD members, increased approximately by 300 %. While in the year 1980 the total value of ODA was about 25 billion USD, in 2007 it was almost 100 billion USD. A very interesting feature of ODA structure development is a fact that agriculture – one of the main parts of the developing countries' economy does not represent an important part of ODA. As it is perceptible from the figure 2, the share of agricultural sector in the total ODA decreases. While in the year 1980 the share of agriculture in total ODA value was more than 10 %, nowadays, it is less than 5 %. The main target of current ODA assistance is a financing of following activities: a social infrastructure and services (about 41% of total ODA), an economic infrastructure and services (13 %), actions relating to debt (11%), a humanitarian aid (8 %), a multisector/cross cutting (7 %), and agriculture as a part of production sector (5 %).

The fall in resources devoted to agriculture has largely been caused by the sharp reduction in external assistance to agriculture. The total official development assistance (ODA) – combined bilateral and multilateral flows – increased sharply from US $ 43 949 million in 1997 to US $ 120 942 million in 2006 (all values in current US dollars). ODA directly earmarked for expenditure in the agriculture sector also rose, albeit more slowly, from just over US $ 3 000 million to about US $ 4 000 million in 2006. However, as a proportion of total ODA, ODA for agriculture continued to decline, falling from 7 percent in 1997 to less than 4 percent from 2002 onwards.[7]

In 2008, the total net ODA from members of the OECD's DAC rose by 10.2% in real terms to USD 119.8 billion. This is the highest dollar figure ever recorded. Bilateral development projects and programmes had a rising trend in recent years; however, they rose significantly by 12.5% in real terms in 2008 compared to 2007, indicating that the donors are substantially scaling up their core aid programmes. In 2005, the donors committed to increase their aid at the Gleneagles G8 and UN Millennium +5 Summits. The pledges, combined with other commitments, implied lifting aid from USD 80 billion in 2004 to USD 130 billion in 2010, at constant 2004 prices. While a few countries have slightly reduced their targets since 2005, the bulk of these commitments remain in force.[8] Overall, the current commitments imply an ODA level of USD

121 billion in 2010, expressed in 2004 dollars, or an increase of USD 20 billion from the 2008 level.[9]

The current global financial crisis has a serious impact on all countries around the world and especially on so called „low income countries". The world trade experiences its largest decline since 1929 and commodity prices, particularly for the exports of low income countries, fall. The foreign direct investment and other private flows are on a decline, and remittances are expected to drop significantly in 2009. Budgets of many developing countries were hit hard by the rises in food and oil prices in the last two years. Many countries are not in a strong fiscal position to address the current financial crisis.[10]

ODA has played a positive countercyclical role during some previous financial crises. After the Mexican debt crisis in 1982, commercial lending was significantly reduced for about a decade, yet ODA rose slightly during this period, playing a strong role in maintaining flows to Latin America. However, the global economic recession in the early 1990´s produced large fiscal deficits in donor countries that led to deep cuts in ODA, which fell from 0.33% of gross national income in 1992 to 0.22% in 1997. Aid cuts at this point in time would place a dangerous additional burden on developing countries already faced with restricted sources of income and increased poverty, and perhaps undo some of the progress already made towards meeting the Millennium Development Goals.[11]

The implications of ODA

During the last 50 years, ODA changed significantly its structure and value. It also changed its priorities. The following part of the paper gives a brief overview about ODA development. If we take in consideration the current prices, the value of ODA increased from 4,7 billion USD in 1960 to 120 billion USD at the end of 2008. It means, that during 49 years the total value of ODA in the world increased by 2461 % and the average inter annual growth rate reached 7,5 %. However, these numbers are misleading – they do not provide realistic information about the current state and the past development of ODA. Due to that reason, the analysis was done in constant prices of the year 2007. During the last almost fifty years, the value of ODA increased from approximately 36 billion USD to 114 billion USD.

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[7] FAO, Commodity reports

[8] http://www.actionforglobalhealth.eu/news/record_oda_levels_still_short_of_targets

[9] http://www.reliefweb.int/rw/rwb.nsf/db900SID/PSLG-7QMJ6T?OpenDocument

[10] www.oecd.org/dac

[11] aid for trade at a glance 2009: maintaining momentum – © oecd/wto 2009

	Inter annual change - average value 1960-2007	Absolute change 1960/2007
Africa	3.16%	217.48%
America	5.21%	324.40%
Asia	3.04%	136.32%
Developing countries	2.86%	221.95%
Europe	8.33%	52.61%
Oceania	7.39%	508.38%

Source: WDI, OECD, own processing

Table 5: ODA development trends for group of countries (constant prices 2007, USD millions).

1977		**1997**		**2007**	
Egypt	2343.99	China	2053.55	Iraq	9176.31
India	988.81	Egypt	1984.77	Afghanistan	3951.08
Syria	823.37	India	1645.09	Tanzania	2810.84
Israel	797.4	Bangladesh	1010.63	Viet Nam	2496.73
Bangladesh	783.57	Viet Nam	998.25	Ethiopia	2422.48
Pakistan	585.52	Mozambique	948.11	Pakistan	2212.42
Morocco	566.24	Tanzania	943.71	Sudan	2104.19
Indonesia	512.92	Bosnia-Herzegovina	861.45	Nigeria	1947.46
Yemen	403.37	Madagascar	833.06	Cameroon	1904.61
Jordan	368.29	Uganda	812.97	Palestinian Adm.	1875.8

Source: WDI, OECD, own processing

Table 6: Main recepients of the ODA (total current prices, USA millions).

Current Prices (USD millions)	1971	1981	1991	2001	2005	2007	Absolute change 1971/2007	Inter annual change - 1971-2007
SOCIAL INFRASTRUCTURE & SERVICES	2 249	5 575	11 215	13 707	29 494	37 599	1571.9%	9.3%
- Education	1 888	2 596	4 947	3 672	5 689	8 430	346.5%	6.1%
- Health	65	1 336	1 424	1 706	3 448	4 339	6594.4%	25.2%
- Water Supply & Sanitation	107	636	1 835	1 973	4 466	4 360	3970.5%	19.3%
- Government & Civil Society	85	312	1 380	2 949	9 218	11 565	13436.0%	20.2%
- Other Social Infrastructure & Services	103	695	1 232	2 291	3 497	3 253	3051.8%	14.8%
ECONOMIC INFRASTRUCTURE, SERVICES	542	3 716	12 157	6 293	10 458	11 794	2074.4%	11.9%
- Transport & Storage	193	1 730	4 950	3 660	5 017	3 862	1896.4%	14.5%
- Communications	104	362	1 158	208	342	274	163.7%	13.8%
- Energy	245	1 623	5 063	1 590	3 238	3 834	1465.5%	15.7%
PRODUCTION SECTORS	670	6 030	6 188	3 701	5 140	5 626	739.4%	10.2%
- Agriculture, Forestry, Fishing	283	2 741	3 798	2 820	3 270	4 245	1399.2%	11.5%
- Industry, Mining, Construction	387	1 406	1 885	606	1 379	812	109.8%	8.3%
MULTISECTOR / CROSS-CUTTING	34	627	1 524	3 000	5 974	6 546	19106.4%	38.6%
TOTAL SECTOR ALLOCABLE	3 496	15 947	31 084	26 700	51 067	61 564	1661.2%	9.2%
COMMODITY AID / GENERAL	1 937	2 268	9 349	2 907	2 575	4 211	117.4%	10.6%

PROG. ASS.								
- Dev. Food Aid/Food Security Ass.	1 409	568	1 781	1 242	890	1 081	-23.3%	14.7%
ACTION RELATING TO DEBT	763	662	7 303	4 156	25 997	9 761	1179.8%	42.6%
HUMANITARIAN AID	128	330	2 700	1 932	7 973	6 996	5364.3%	20.8%
ADMINISTRATIVE COSTS OF DONORS			1 582	2 754	3 872	4 884	530.9%	13.8%
SUPPORT TO NGO'S			700	1 448	1 252	2 140	200.7%	14.0%
UNALLOCATED/UNSPECIFIED	1 725	3 536	4 325	1 366	1 742	1 265	-26.7%	11.0%
TOTAL ODA (all donors)	7 723	32 381	60 877	51 909	107 671	105 284	1263.2%	8.2%

Source: OECD, own processing

Table 7: The structure of ODA distribution.
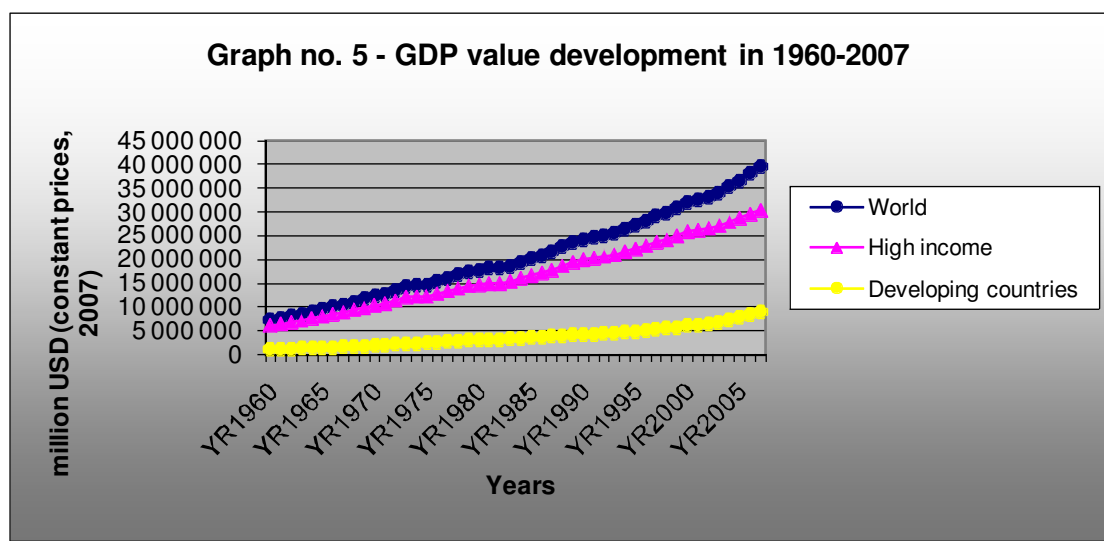
Graph 5.
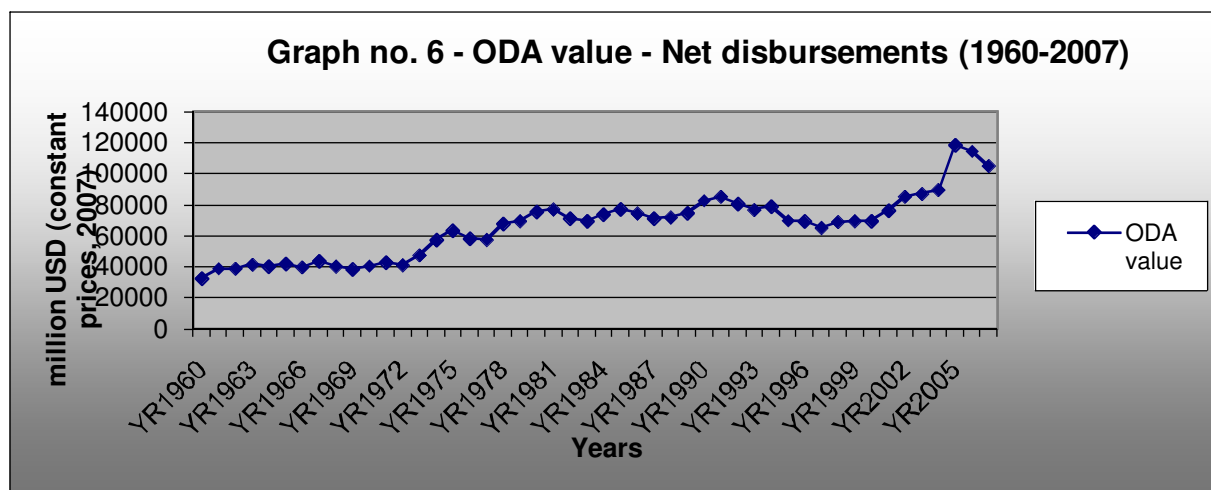
Graph 6.

It means that the value of ODA increased by c. 214 % and the average inter annual growth rate reached cc 2,7 %. The OECD members have the main share in total ODA which is provided around the world – more than 95% of total net disbursements. But it has to be emphasized that in reality about 70 % of ODA is provided by only 7 countries (G7 members – USA, Japan, Germany, Italy, France, Canada and United Kingdom). Although their share in the total ODA value slowly decreases, they are the main pillars of current ODA system.

The following table 1 gives brief information about ODA value development and changes which happened in period 1960 - 2008. The dominant role of G7 countries is quite visible and also we can see

that more than 70 % of the total ODA value is realized through the bilateral agreements and just 30 % is realized through multilateral agreements. Notwithstanding it has to be emphasized that the role of multilateral activities on ODA constantly increases. While in 1960 the share of multilateral agreements in total ODA value was about 14 %, nowadays it is almost one third. EU members together with USA, Japan, Canada, Australia and New Zealand are the most important donors. But while in 1960 the most important donors were USA (their share in total ODA was 40 %) and France (more than 20 %), the current situation is a little bit different. USA are still the most important donor country but their share is about 22 %. The share of France is 9 %. The other important donors are the United Kingdom, Germany, Japan and the Netherlands.

The following table 2 offers information about the main development trends in ODA between the years 1960-2008. Data show that ODA is mostly connected with G7 and DAC member states. There are huge differences between values of ODA expressed in current prices and in constant prices. DAC countries, which are the most significant ODA donors around the world, increased their value of ODA by more than 200 %; G7 countries increased their value of ODA by about 130 % in the same period. The share of G7 countries in the total ODA value constantly decreased vice versa with the share of other donors. The inter annual growth rate of ODA provided by G7 members is lower in comparison with other DAC members. Austria, Finland, Sweden, Switzerland, Norway, Italy, Denmark and Canada belong to the group of donors with increasing level of ODA. The mentioned countries significantly increased the ODA value. These countries with a high level system of social solidarity dramatically increased their share in the total DAC countries ODA value. On the other hand, these countries, which are traditional cornerstones for ODA, lost their shares. However, it has to be emphasized that all DAC countries constantly increased the value of ODA.

A distribution is a very important phenomenon connected with ODA. In the last century, a major part of ODA was distributed on base of bilateral agreements. A value of ODA, which is distributed through the bilateral relationships, increased by 160 % and an average inter annual growth rate of bilateral ODA value reached 2,4 %. On the other hand, the share of ODA value, which is provided on a multilateral base, increases due to the growing role of globalization and internationalization. In comparison with the year 1960, the current value of multilateral ODA increased by more than 500 % and during the analyzed time period the average

inter annual growth rate of multilateral ODA reached 6,4 %. However, ODA real value grew much slower than if it is expressed in nominal values.

ODA recipient

The main ODA recipients are developing countries around the world. While the value of ODA constantly increases, the share of ODA in the total GDP value of developing countries decreased. While in sixties the share of ODA in developing countries' GDP was more than 3 %, in 2007 it was just 1.1 %. Expressed in constant prices – ODA value for developing countries increased during the analyzed time period by more than 200 %. The most significant growth of ODA can be seen in a case of Oceania, Latina America and Africa.

The territorial structure of ODA changed. While in 1960 more than 45 % of the total ODA was distributed among Asia countries, nowadays it is just 33 %. While Far East and South and Central Asia lost their shares in the total ODA. The Middle East region share significantly increased. There are no changes for Africa over the last fifty years. The only exception is North Africa that stopped to be the main target of distributed ODA. The position of Europe as one of the main donors is declining when comparing the decreasing share in total value of ODA. The same situation is evident in both Central and South America (Table 4).

Huge differences in main development trend exist over the world. While Asia and Africa are the main recipients of ODA and their inter annual growth rates of ODA received are about 3,04 % respectively 3,16 %, the other regions except for Europe also significantly increased the value of ODA received. Their inter annual growth rates of ODA received are much higher in comparison with Africa and Asia. American inter annual growth rate reached in monitored time period the average value about 5.2 % and Oceania inter annual growth rate reached the value about 7.4% (Table 5).

The following table 6 informs us about the main recipients of ODA during the last 30 years. The structure of recipients has been changed. It is very hard to find the same countries among first 10 recipients in selected years. ODA value has changed in case of all countries. Almost no country has a fluent flow of ODA. The political, economic and social situation constantly changed. We are witness of the whole chain of changes which happened during the last few decades. Many of events are connected with the development of only

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(in million USD)		1960	1970	1980	1990	2000	2004	2007	Absolute change 1960-2007	Inter annual change 1960-2007
G7 (CoP)	LDCs	2246	3195	7567	10134	7220	11983	13135	484.80%	4.90%
All Donors (CoP)	LDCs	3291	5548	19638	24465	18633	29011	32470	886.50%	5.60%
G7 (CoP)	LMICs	8556	7114	8094	14980	10549	12918	14517	69.70%	3.20%
All Donors (CoP)	LMICs	9122	11182	20953	26616	20710	22509	25956	184.60%	3.70%
G7(CoP)	Other LICs	8653	9537	3262	4800	4369	5104	6890	-20.40%	2.70%
All Donors (CoP)	Other LICs	8619	12442	12630	10576	10340	12018	15468	79.50%	3.00%
G7 (CoP)	UMICs	2267	1870	2468	2989	1057	1297	1891	-16.60%	2.90%
All Donors (CoP)	UMICs	1939	3037	4657	4984	2614	2922	4099	111.40%	3.90%
G7 (CoP)	MADCTs	3528	2806	3373	3112	34	2		-100.00%	-9.40%
All Donors (CoP)	MADCTs	3510	3214	4159	3634	209	65		-98.10%	-3.30%
G7 (CuP)	LDCs	261	494	3353	6991	5306	10600	13135	4934.10%	10.30%
All Donors (CuP)	LDCs	369	843	8601	16518	12618	25215	32470	8711.30%	11.10%
G7(CuP)	LMICs	1070	1238	3643	10956	9139	11982	14517	1256.10%	8.10%
All Donors (CuP)	LMICs	1116	1866	9296	18751	15371	20112	25956	2226.50%	8.80%
G7(CuP)	Other LICs	1245	1774	1422	3330	3878	4666	6890	453.40%	7.00%
All Donors (CuP)	Other LICs	1240	2205	5535	7147	7842	10632	15468	1147.40%	7.40%
G7 (CuP)	UMICs	325	326	1111	2196	783	1188	1891	481.20%	8.90%
All Donors (CuP)	UMICs	288	513	2067	3537	1726	2566	4099	1323.40%	8.70%
G7 (CuP)	MADCTs	513	474	1536	2118	20	1		-99.70%	xx
All Donors (CuP)	MADCTs	509	531	1881	2460	131	57		-88.70%	xx

Notice: CuP – current prices
CoP – Constant prices (2007 USD)
Source: WDI, OECD, own processing

Table 8: ODA distribution between chosen groups of countries (Net disbursements).

selected part of the world. However, their impact on the other parts of the world is obvious. ODA has to be able to react to all changes and it should be flexible. This is the reason why the ODA value flows changed year by year.

In general,a ODA is distributed among the following activities: a social infrastructure and service (e.g. education, health, water supply, sanitation etc.), an economic infrastructure and services (e.g. transport, storage, communications, energy, etc.), a production sector (e.g. agriculture, forestry, fishing, industry, mining, construction, etc.), a multisector (e.g. environment protection etc.), a commodity aid (e.g. budget support, food aid, a commodity assessment, etc.), actions related to debt, a humanitarian aid (e.g. an emergency response, a reconstruction relief and rehabilitation, a disaster prevention, etc.) and so on.

For a different kind of economic, humanitarian and social activities, donor countries around the world have spent more than 100 billion USD a year. Only between the years 1971 and 2007, the value of ODA received by individual sectors increased more than 12 times (expressed in current prices). The average inter annual growth rate of ODA is about 8

% per year. The one half of total ODA is allocated to sectors connected with social infrastructure and development of economic activities. Second half of the sum is determined for humanitarian activities, protection of living environment, administration costs, supports of NGO'S etc.

The majority of provided ODA is connected with programmes for social infrastructure and services development. In 2007, more then 35 % of total ODA was allocated into the above mentioned activities. Just for economic infrastructure development it was allocated more than 11 % of the total ODA. The support of production sectors represents about 5 % of total ODA. Multisector activities represents about 6 % of total ODA value. For the purpose of commodity aid, only 4 % of the total ODA value are provided.

Table 7 gives us information about the structure of ODA provided. There are individual activities which are connected with ODA distribution and the development of ODA value which was allocated into different programs since 1971. During the last three decades, the most progressive development was recorded in case of financing of those activities which are connected with a debt control

(year by year, the average inter annual growth rate was more than 40%), an environmental protection and other actions connected with the multisectoral development. This is also connected with a high value of inter annual growth rate (on average 38,6 %).

The high level of ODA inter annual growth rate was also recorded in case of those developing activities connected with health, water supply and sanitation and humanitarian aid. The average inter annual growth rate of developing assistance, in case of the other developing activities supported by ODA, fluctuated between 5 - 15% a year.

It must be emphasized that more than 65 % of the total ODA is intended for those projects which are connected with individual countries' infrastructure development. The share of ODA, projected for above mentioned purposes, constantly increases, while in 1970 it was only 44 % of the total ODA; nowadays the share is much higher. Compare to that, the humanitarian and anti-crisis activities represented in 2007 only about 20 % of the total ODA value. The share of money used for these activities has decreased (in 1970 the share of ODA for humanitarian and anti-crisis was about 37 %.).

During the last more than three decades, the trends and priorities of ODA distribution has significantly changed. While the programs for humanitarian aid and anti-crisis activities recorded the average inter annual growth rate of ODA only about 20 %, those activities which are connected with economic and social infrastructure development recorded the average inter annual growth rate about 40 %. It means that donor countries changed their attitude to developing priorities and they stopped to support the activities which are not connected with the future growth rate of economic and social potential of individual countries. But not all money, which are planned for ODA, are in fact used for developing activities. Administrative costs represented about 5 % of the total ODA value and in 2007 it was about 5 billion USD. The detailed information about the structure of ODA distribution are contained in the following table 7.

The following tables 8 and 9 contain information about ODA distribution among the following four groups of countries which are the main target of ODA (the least developing countries – LDCs, low middle income countries – LMICs, upper middle income countries – UMICs and more advanced developing countries and territories – MADCTs).

More than 1 758 billion USD was distributed among the all developing countries around in the world (it was 3 181 billion USD in constant prices of the year 2007) during the last 47 years. During the same time period, the developed countries increased their GDP by 400 % and the developing countries increased their GDP even by 680 %.

At the beginning of the sixties, the low middle income countries and the low income countries were the main target of ODA (together about 70 % of total ODA value). Nowadays, countries which are included in the list of the least developed countries are the main target of ODA. During the last five decades, the significant changes in ODA value distribution was also recorded in a case of the upper middle income countries and more advanced developing countries and territories. The share of ODA projected for upper middle income countries decreased from 7 % to 5 % and in the case of more advanced developing countries and territories we witnessed even a decrease from 13 % in 1960 to almost zero percent at the beginning of 21st century.

During the last five decades, the priorities of ODA distribution changed. The donor countries decided to support especially those developing countries with high pro-growth potential (low middle income countries) and the countries which have to face the humanitarian and economy collapse (the least developed countries). These countries became the main target of ODA while the other countries lost their importance (but it does not mean that developed countries do not care about these territories. Although the other countries are not the main target of ODA, they have possibility to growth especially through a permanent process of internationalization and globalization and through a process of world trade liberalization and etc.).

The majority of ODA was distributed by G7 countries. These countries are the main engine of ODA. In sixties, they share in the total ODA distributed around the world was almost 90 %; nowadays, it is about 50 %. While at the beginning of the sixties, G7 countries supported especially low and low middle income countries, nowadays, they support especially the least developed and the low middle income countries.

During the above mentioned period, the least developed countries witnessed the most significant growth of received ODA (almost 900 %). The other groups of countries recorded the inter annual growth about 3-4 % except for those countries which are included between more advanced developing countries and territories. These territories recorded negative growth rate -3,3 % per year and the current value of ODA received is almost zero.

	1960	1970	1980	1990	2000	2004	2007
LDCs	10.1%	13.6%	25.9%	29.5%	26.7%	32.3%	30.8%
LMICs	27.9%	27.4%	27.6%	32.1%	29.7%	25.1%	24.7%
Other LICs	26.4%	30.5%	16.6%	12.8%	14.8%	13.4%	14.7%
UMICs	5.9%	7.5%	6.1%	6.0%	3.7%	3.3%	3.9%
MADCTs	10.7%	7.9%	5.5%	4.4%	0.3%	0.1%	x
Developing Countries	32702.2	40753.8	75892.6	82934.6	69799.9	89679.9	105284

Source: WDI, OECD, own processing

Table 9: ODA Total Net disbursements All donors (Constant Prices (2007 USD millions).

	Elasticity - 1% change in ODA causes ?? Change in GDP (1960-2007)	R	R2	alfa = 0.01	alfa = 0.5
America	X	0.78	0.54	positive	positive
Europe	X	0.55	0.3	positive	positive
Asia	X	0.53	0.28	positive	positive
Africa	X	0.85	**0.72**	positive	positive
Oceania	X	0.3	0.1	negative	positive
LICs – low income countries	0,013	0.86	**0.74**	positive	positive
LMICs – low middle income countries	0,05	0.74	0.55	positive	positive
UMICs – upper middle income countries	0,013	0.123	0.015	negative	negative
LDCs – least developed countries	0.27	0.49	0.24	positive	positive
Developing countries	**0.25**	0.88	**0.78**	positive	positive

Source: WDI, OECD, own calculations

Table 10: Relationship between ODA and GDP growth.

The analysis of the relationship between GDP and ODA assistance

We have to analyze the development of ODA from two different points of view. Firstly, we have to mention an impact of ODA on economy of individual countries (GDP) – in case of countries receiving ODA. Secondly, the relationship between ODA value and the development of donors economies (development of donor countries' GDP) has to be taken in consideration.

Nowadays, ODA value distributed around the world represents more than 100 billion USD. The above mentioned money are distributed among individual parts of the world and group of countries. The provided ODA has different impact on individual groups of ODA recipients states. The table 10 offers information about arelationship between the growth of ODA and GDP growth of individual groups of countries and territories.

We can confirm the general relationship between ODA value received and developing countries GDP. Results of processed regression and elasticity analyses   follow.
The results of our analyses show that if ODA value changes by 1 %, developing countries GDP should

change by 0,25 %. During the monitored time period, the most progressive relationship between ODA and GDP can be find out in case of the least developed countries.

From statistical point of view, the relationship between ODA received and GDP was recorded in case of Africa and low income countries. These two subjects (recipients of ODA) represent areas which are the main targets of international ODA. The value of ODA influenced their economy growth. On the other hand, there are some regions (e.g. Asia, Oceania) and groups of countries (LMICs, UMICs) whose economies are not really dependant on ODA received. Although these economies are the target of ODA, their economies are not dependant on ODA and ODA is not an engine of their economy growth.

The following table 11 provides information about a relationship between ODA value provided and GDP development from donor countries point of view. The value of ODA provided around the world depends on GDP. If the value of GDP around the world increases about 1 %, the value of ODA should growth by 1.74 %. This relationship was also proved through a statistical analyses of the relationship between ODA and GDP value development.

Compare to that, the DAC countries, which represent the most important donors of ODA, have a positive relationship between GDP value development and provided ODA value. The positive relationship was proved in case of the following countries (Australia, Denmark, Finland, Germany, Ireland, Japan, Luxemburg, the Netherlands, Norway, Spain, Sweden, and Switzerland). In case of other countries, the relationship was not proved. The important result is the fact that in case of the main ODA donors (the USA, the United Kingdom, France, Italy) and some other donors (Canada, Belgium, Austria, New Zealand and Portugal) the relationship between their GDP and ODA provided was not proved.

In case of these countries, the ODA value does not depend on an economy performance of individual countries, but probably the value of ODA provided depends on some other factors (social, political, strategic etc.). While the majority of the analysed countries has a positive relationship between GDP growth and the growth of ODA, there are some countries with even a negative value of growth rate

(USA, New Zealand, the Netherlands, Japan). The mentioned results demonstrate that the final value of ODA do not depend just on donor countries' GDP value development, but also on some other factors (especially in case of the most important donors).

The table 12 presents information about how the growth of economy influenced the growth of ODA distributed into individual sectors in case of high income and developing countries and also the world average. The most progressive relationship can be to find in case of the following activities: debts assistance, commodity aid, humanitarian aid, food aid, environmental protection programs and activities connected with development in the following areas – communications, government and civil society, healthy and energy.

The financing process of the mentioned activities is the most sensitive to GDP value development. In case of other activities, the growth of GDP is not connected with so high percentage of value growth.

	Elasticity - 1% change in GDP value means ?? change in ODA (constant prices) in 1960-2007	R	R2	alfa = 0.01
World	1.74	0.92	0.86	positive
DAC Countries	1.62	0.91	0.84	positive
G 7	0.71	0.82	**0.66**	positive
Australia	1.99	0.86	0.75	positive
Austria	3.97	0.82	**0.67**	positive
Belgium	0.25	0.8	**0.63**	positive
Canada	1.71	0.8	**0.62**	positive
Denmark	0.34	0.97	0.95	positive
Finland	4.71	0.88	0.76	positive
France	1.19	0.63	**0.4**	positive
Germany	1.61	0.85	0.73	positive
Ireland	2.05	0.96	0.92	positive
Italy	5.84	0.72	**0.52**	positive
Japan	-0.11	0.93	0.87	positive
Luxembourg	1.38	0.97	0.94	positive
Netherlands	-0.46	0.95	0.91	positive
New Zealand	-4.32	0.81	**0.66**	positive
Norway	16.51	0.97	0.95	positive
Portugal	2.45	0.85	**0.72**	positive
Spain	4.04	0.93	0.87	positive
Sweden	3.19	0.95	0.9	positive
Switzerland	0.73	0.97	0.94	positive
United Kingdom	0.21	0.73	**0.53**	positive
United States	-2.25	0.11	**0.013**	negative

Source: WDI, OECD, own calculations

Table 11: Relationship between ODA and GDP – donor countries.

Elasticity - 1% change in GDP value means ?? change in ODA (constant prices) (1971-2007)	High income (%)	World (%)	Developing countries (%)
SOCIAL INFRASTRUCTURE & SERVICES	6.25	3.61	2.19
- Education	4.10	2.29	1.35
- Health	13.29	7.43	4.70
- Water Supply & Sanitation	9.21	5.53	3.13
- Government & Civil Society	10.55	9.40	6.70
- Other Social Infrastructure & Services	13.95	7.08	4.01
ECONOMIC INFRASTRUCTURE AND SERVICES	6.71	4.86	2.55
- Transport & Storage	4.26	4.27	2.99
- Communications	14.05	10.84	5.46
- Energy	12.36	7.25	3.29
PRODUCTION SECTORS	4.46	2.75	1.72
- Agriculture, Forestry, Fishing	5.44	3.06	2.07
- Industry, Mining, Construction	3.66	2.44	1.28
MULTISECTOR / CROSS-CUTTING	8.58	7.64	6.88
ADMINISTRATIVE COSTS OF DONORS	2.65	2.26	1.81
COMMODITY AID / GENERAL PROG. ASS.	23.32	10.22	4.40
- Dev. Food Aid/Food Security Ass.	25.45	9.03	3.21
ACTION RELATING TO DEBT	18.85	12.47	11.11
HUMANITARIAN AID	16.38	9.73	5.95
SUPPORT TO NGO'S	5.96	4.93	3.25
UNALLOCATED/UNSPECIFIED	0.77	1.85	1.87

Source: WDI, OECD, own calculations

Table 12: Relationship between GDP value development and development of ODA value.

The positive relationship between ODA value provided and donor countries GDP value was proved in case of the following activities of financing: social infrastructure and services (especially - education, health, water supply and sanitation), multisetor and cross cutting (especially – environmental protection), administration and humanitarian aid. The mentioned activities really depend on GDP values (in fact, the financing of these activities is connected with free sources in donor countries budgets), while the others are independent on the GDP value development.

Sectors not connected with a long-term development of supported economies (economy infrastructure and services, production sectors, commodity aid, debt assistance and the support of NGO's) belong among sectors which are not dependant on GDP development in donor countries. The mentioned activities are objects of a long term developing assistance and they represent the main key through which it is possible to solve a problem of developing countries. The financing of above mentioned activities is connected with a reconstruction of economies of developing countries.

The relationship between ODA provided and donors' GDP was proved. The relationship was also proved in case of such activities as social infrastructure development, environmental protection and humanitarian aid – these activities are strongly related with GDP growth. On the other hand, such activities like economic infrastructure development, production sectors support, commodity and food aid do not depend on GDP growth.

The last table 14 provides information about the impact of ODA received on developing countries' GDP. The mentioned tables provide data about the distribution of ODA among individual developing activities. The positive relationship was proved in case of social infrastructure and services activities, economic infrastructure and services, multisector activities and humanitarian aid. On the contrary, the negative relationship was recorded in the case of production sectors, communications and commodity aid. GDP development is connected especially with financing of activities connected with creation of convenient environment for developing of economic activities.

The influence of current financial crisis on ability of donors to provide development assistance and the impact of development assistance slowdown on developing countries economy

The analyses proved that the direct relationship between ODA value provided and the economy growth of individual donor countries exists. It was also proved that direct relationship between received ODA value and GDP development in recipient countries exist there. The results of above mentioned analyses are following: If GDP of the world and the main donor countries changes by 1 %, the value of ODA provided will change by about 1,7 %. If provided ODA value changes by 1 %, the GDP value in developing countries will change by 0,25 %.

The current financial crisis makes situation worse in the case of majority of countries. The gap between developed and developing countries will grow. The current level of ODA is unable to improve the economic situation of all developing countries. The majority of developing countries economies will have to face problems connected with the world economy slowdown,

However, the impact of ODA slowdown will be possible to experience in areas connected with the developing assistance distribution (not all part of individual developing countries economy are targets of ODA). The amount of current ODA provided to developing countries does not have any ambition to improve or to stabilize the economy of developing countries. The current level is just able to help those sectors and especially to the most vulnerable people.

The following figures 3 - 6, illustrate that the general trends of received ODA value and GDP development both increase. A decline in ODA value received is not connected with a decline in GDP value. The secline of ODA value is accompanied by a certain decline in growth rate of individual groups of developing countries GDP. Graphs also illustrate that ODA value development (received and provided) is not really closely related with GDP development in developed and developing countries. There is a common development trend but we can see that the decline of provided ODA value is not accompanied by a

decline of developing or developed countries GDP. Therefore, we can say that slowdown of the decline of ODA value provided does not affect GDP development (from recipients countries point of view) so much and on the other hand, we can say that the slowdown of world GDP will have only a minimal impact on the provided ODA value (from donors point of view).

The distributed ODA can just help to solve the most critical situation and it can also help to improve the quality of life of those people who are targets of ODA distribution. The most vulnerable groups are the low income countries and the least developed countries. In case of the former, the high level of dependency between ODA received and GDP development exists. In case of the later, the relationship between ODA and GDP was not proved. However, due to the situation of these countries, which are target of the high share of humanitarian assistance, if the value of ODA declines, we can expect a deterioration of living conditions of their inhabitants. In case of other groups (the upper middle income and the low middle income countries) of developing countries, the direct relationship between ODA value and GDP was not confirmed and on the base of our results we can say that the provided ODA is not significant stimuli for economy growth.

The current crisis affected a decision of certain donors' about ODA value provided. In case of the majority of the donors, the final decision about ODA value provided is connected with their economies performance. The analysis proved that in case of fifteen of the most important ODA donors, the relationship between GDP value development and ODA value provided existed. Only in the case of seven donors, the relationship was not proved. However, these countries belong to the most important world economy engines and they represent the main ODA pillars.

We can say that the global economy decline will probably affect altruism of the donor countries'. Their main priority will be a stabilization of their own economies and a resuscitation of their (GDP) growth. Some countries, which are the main engines of world economy and the main policy makers, will be independent on their ODA policy, but the countries (especially small developed countries) which were affected by the crisis and

ODA in dependence on donor's GDP	R	R2	alfa=0.01
SOCIAL INFRASTRUCTURE & SERVICES	0.91	0.84	positive
- Education	0.87	0.76	positive
- Health	0.89	0.79	positive
- Water Supply & Sanitation	0.9	0.82	positive
- Government & Civil Society	0.8	0.64	positive
- Other Social Infrastructure & Services	0.96	0.92	positive
ECONOMIC INFRASTRUCTURE AND SERVICES	0.8	0.64	positive
- Transport & Storage	0.77	0.6	positive
- Communications	0.066	0.0044	positive
- Energy	0.66	0.45	positive
PRODUCTION SECTORS	0.25	0.065	negative
- Agriculture, Forestry, Fishing	0.49	0.24	positive
- Industry, Mining, Construction	0.05	0.0025	negative
MULTISECTOR / CROSS-CUTTING	0.94	0.87	positive
ADMINISTRATIVE COSTS OF DONORS	0.96	0.93	positive
COMMODITY AID / GENERAL PROG. ASS.	0.13	0.018	negative
- Dev. Food Aid/Food Security Ass.	0.19	0.037	negative
ACTION RELATING TO DEBT	0.71	0.5	positive
HUMANITARIAN AID	0.86	0.75	positive
SUPPORT TO NGO'S	0.65	0.42	positive
UNALLOCATED/UNSPECIFIED	0.4	0.15	positive

Source: WDI, OECD, own calculations

Table 13: Relationship between ODA and donor's GDP.

GDP in dependence on ODA value	R	R2	alfa=0.01
SOCIAL INFRASTRUCTURE & SERVICES	0.96	0.92	positive
- Education	0.87	0.76	positive
- Health	0.93	0.87	positive
- Water Supply & Sanitation	0.89	0.8	positive
- Government & Civil Society	0.89	0.79	positive
- Other Social Infrastructure & Services	0.96	0.92	positive
ECONOMIC INFRASTRUCTURE AND SERVICES	0.75	0.56	positive
- Transport & Storage	0.69	0.48	positive
- Communications	0.034	0.0012	negative
- Energy	0.62	0.39	positive
PRODUCTION SECTORS	0.195	0.038	negative
- Agriculture, Forestry, Fishing	0.41	0.17	negative
- Industry, Mining, Construction	0.016	0.0002	negative
MULTISECTOR / CROSS-CUTTING	0.96	0.93	positive
ADMINISTRATIVE COSTS OF DONORS	0.98	0.96	positive
COMMODITY AID / GENERAL PROG. ASS.	0.048	0.002	negative
- Dev. Food Aid/Food Security Ass.	0.24	0.0588	negative
ACTION RELATING TO DEBT	0.75	0.57	positive
HUMANITARIAN AID	0.91	0.83	positive
SUPPORT TO NGO'S	0.71	0.51	positive
UNALLOCATED/UNSPECIFIED	0.39	0.15	negative

Source: WDI, OECD, own calculations

Table 14: Impact of ODA received on developing countries' GDP.

which do not have sufficient internal sources, will probably freeze their ODA. The own ODA value decline will not significantly affect individual developing economies growth, but it is possible to expect that some target groups of people in developing countries will be in much worse situation than they had been before the crisis appeared.

Conclusion

At the end of our paper we can say that the development assistance provided by developed countries represents a certain kind of stimuli for development of developing countries. The value of ODA distributed around the world represents more than 100 billion USD and during the last almost five decades the value of ODA increased by more than
200 %. Targets of ODA are especially developing countries with a low level of economy growth. The main targets of ODA are countries situated in Africa and Asia. The positive relationship between ODA value received and GDP value was proved especially in the case of African countries and also for the group of the low income countries. The main donors are countries with the high share in world economy. The most important donors are G7 members. The analyses conducted proved that the value of ODA provided is closely related with GDP development of donor countries. The majority of donors makes a decision about ODA provided on the base of GDP development, but it has to be emphasized that some donors, whose decision making process connected with ODA value provided is not dependant on their GDP development (USA, France, Italy, UK), also exist.

The total value of ODA is distributed among many developing activities and while some of them are closely related to the donor countries' GDP growth, some of them are quite independent. The same can

be said about the influence of ODA received on recipients countries' GDP.

Developing aid is not automatically connected with GDP growth; many developing countries have almost no relationship between ODA received and GDP performance. The effect of ODA on GDP development usually depends on a structure of developing activities financed. Pro-growth activities are usually those which are connected with a social infrastructure and services development, an environmental protection and other multisector activities, and economic infrastructure and services development.

It is very difficult to make some prediction about a future development of ODA value now. The current crisis influenced the world economy. It influenced the ability of donors to provide ODA and on the other hand, the crisis also increased a demand of developing countries for additional ODA. We proved that a positive relationship between ODA provided and GDP development of main donor exists. It is possible to say that the current crisis affected the willingness of donors to pay additional money, while on the other hand, some developing countries are more and more dependant on developing assistance. The developing assistance will be probably still grow, but the inter annual growth rate of ODA will be lower in comparison with last decades. It is also possible to expect that the donor countries will change their priorities – in case of ODA allocation process and also they will be more strict in case of ODA distribution. The demand of developing countries for ODA will not be satisfied for sure and it is possible to expect the growing competition between individual developing countries to receive additional sources for their economy development.

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Videoconferencing for more effective cooperation

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Abstract

This contribution has three parts. The first part focuses on the analysis of the basic functionalities of different videoconference systems. The second part presents practical experience in the use of different videoconference systems in the NODES project and within the framework of the ELLS universities network. The third part provides recommendations for virtual meetings in the rural context, particularly in respect of overcoming the distance handicap and the geographical isolation of rural communities.

Key words

Videoconferencing, cooperation, virtual meeting, rural sustainability, Nodes project, ELLS

Abstrakt

Tento příspěvek má tři části. První část se zaměřuje na analýzu základních funkcí různých videokonferenčních systémů. Druhá část představuje praktické zkušenosti s používáním různých systémů videokonferencí v rámci projektu a v rámci univerzitní sítě ELLS. Třetí část poskytuje doporučení pro virtuální setkání na venkově, zejména pokud jde o překonání vzdálenosti a geografické izolace venkovských komunit.

Klíčová slova

Videokonference, spolupráce, virtuální setkání, udržitelnost venkova, projekt NODES, ELLS

Introduction

Communication is based on the proper function of the society, of the community and of the social relations in general. For the humankind the communication function also involves behaviour, expressions, gestures and different forms of symbols and signals. The main function of communication is mutual understanding as a prerequisite for coexistence and mutual interdependence.

Videoconferencing represents one of the most advanced methods of communication. We can say that the term "videoconference" has now become a common expression for a synchronised audiovisual communication, which is arranged with the use of computers.

Aims and Methodology

The main aim of this article is to explore the technological potentials in the usage of videoconferencing. Another aim is to compare the advantages and disadvantages of virtual meeting and to show on a few practical examples how it is possible to effectively conduct a meeting via videoconferencing.

Results

Videoconferencing

In general, videoconferences currently used more and more, operate on H 323 standard for the IP networks, which are based on the interconnection of packets.

The transmitted data are divided into large blocks of the same size, the so called packets, with other details attached (eg the addresses of the sender and receiver). Each packet then travels via the transmission medium independently and thus a loss of a packet could occur while in transit, or even a situation could happen in which the packets are not delivered in the same order they had been sent. A number of users usually share a single physical or virtual transmission medium. The same medium,

which is being used for the videoconference, is simultaneously being used by other users who view the Internet, read their emails, etc. Therefore, if a videoconference takes place using the Internet infrastructure, the quality of provided services (QoS) cannot be guaranteed, according to Burriel (2003).

The Internet protocol uses a mechanism which creates a relatively reliable medium out of a little reliable data carrier. This mechanism is called TCP. However, there is a major problem in the fact that when one packet is lost, the remaining packets
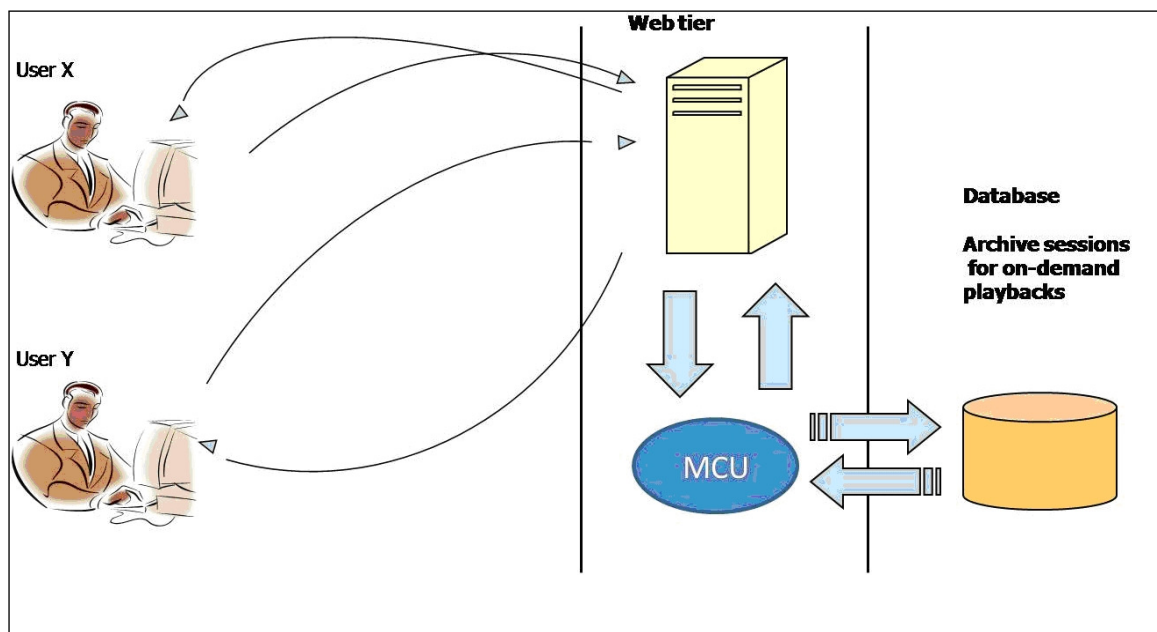
Figure 1. The scheme of a group conference using the MCU.

cannot be received until the lost packet is resent and successfully received. In videoconferences it is much more important to maintain a continuous stream of current data, even at the cost of having IP networks deliberately use the UDP protocol, which is not so sensitive to the loss of packets.

The terminal station for an IP conference is equipped with one or more cameras, a microphone and a loud speaker. The image and sound recorded by the input equipment at the terminal station (camera and microphone) are coded according to appropriate standards and sent away. The terminal station at the other end then decodes the signal according to given standards.

In videoconferences, the quality of the audio signal is a critical factor. The occasional "graining" of the image or other faults in the quality of the transmitted picture are more readily tolerated by the users, than the poor quality of the sound. Another significant factor, which influences the quality of videoconferences, is the transmission speed. At present, the speed of about 384Kbps is sufficient for most videoconferences.

some packets "falling off the table". It is more useful to receive the data on time than in the correct order. For this reason, the videoconferences on the

Three tier solutions

The videoconferencing is based on three tier architecture Client/Server. Users are authenticated in real-time for access online meeting via standard browser.

A Multipoint Control Unit (MCU) is a server commonly used to bridge videoconferencing connections and enables a simultaneous communications. This MCU server is a kind of mediator amongst all the users, thus creating a virtual space for the meeting.

Database is used for videoconference storage. The sessions can be access via streaming.

The functions, which are provided by a group videoconference system (Havlicek and Dvorak 2006):

Audio and Video conference (Video and Voice over IP) – the basic functions of the system, i.e. the transmission of the voice and image.

Whiteboard – an area on the screen which is allocated for visualising (and/or modifying) the shared information. Currently, this is the most important and most desirable function in the practical implementation of a videoconference.

The text chat/instant messaging (Chat) – serves for an instant transmission of text from the user to other participants of the videoconference. It is possible to send the message either to everybody, or only to specific persons.

Application sharing – this is a means for presentation and sharing of control of any application by all participants of the conference.

List of users (participants) – this provides a list of all users currently connected to the system.

Recording – an option for recording of individual conferences for later use.

Videoconferencing make possible to hold "virtual meetings", at which the people not only hear one another but they can also see one another, even if separated by great distances. Such meetings concerns a kind of conferences, which can take place at several different places simultaneously, and which are mutually interconnected with a parallel transmission of the picture, sound and even data. The participants of such a "virtual meeting" can be present anywhere around the world, while they deal with one another as if they were sitting together at the same table at a single location.

Videoconferencing – practical examples

The NODES project

One of aims of the Socrates Grundtvig NODES project, which had been realised in the period of 2006-2008, was to create a network in adult training / lifelong learning, in order to facilitate competitiveness, employability and mobility of adults who are victims of the digital divide or of some of its components such as distance, initial level of knowledge, language, use of complex technologies [1]. The participants of the project are as follows: ENESA Dijon (F) - (coordinator), UCC

Cork (Ie), Uni Debrecen (HU), UPM Madrid (Sp), ULB Sibiu (Ro) and CULS Prague (Cz).

Implementation of the project was spread over 6 semesters. Every month (at 11:00 am on the first Monday of the month), a videoconference via the Marratech system was held with the participation of all partners. The videoconference usually lasts for 60 to 90 minutes and is conducted according to a script prepared by the coordinator (see Fig. 2). Individual participants exchange their experience and are asked to make comments on the specific items of the programme.

So far we have had about 15 videoconferences within the framework of this project. The most successful were those which had been well prepared in advance. The progress of this project which is being undertaken by a large international group has already confirmed the benefits of the system for the solution of the long distance handicap and its use in remote rural areas.

We have tested videoconference connections amongst several NODES-CZ centres. In those centres, which use the Internet connection via ADSL, the quality of videoconferences was good and the participants were happy with the virtual discussion.

In each country, a test group made of final users and actors of intermediary institutions was be associated to the work. NODES contribute too by providing to the networks of adult training institutions [4].

ELLS universities network

The Euroleague for Life Sciences (ELLS) represents a network of elite universities, which collaborate in the following areas: management of natural resources, agricultural and forest sciences, veterinary sciences, environmental sciences, social sciences and others.

At present the ELLS members are:

- The Royal Veterinary and Agricultural University (LIFE), Copenhagen, Denmark
- University of Hohenheim (UHOH), Stuttgart, Germany
- Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden

- University of Natural Resources and Applied Life Sciences (BOKU), Vienna, Austria
- Wageningen University and Research Centre (WUR), Wageningen, The Netherlands
- Czech University of Agriculture Prague (CUA)
- Warsaw Agricultural University, Poland (SGGW)

ELLS aims, first of all, at joint teaching – summer schools, joint courses, and also at assuring an overall high quality of teaching. A web based desktop videoconferencing system delivers rich content into live meetings, shares applications and stimulates group work. Since all of the ELLS universities are involved in agriculture, they have an active contact with rural areas. Thus they contribute their expertise towards the introduction of videoconferences into remote rural areas and bring them closer to modern technology, and sources of information. For creating virtual meetings the web conferencing software Adobe.

Figure 2. An example of a virtual conference according to a predefined programme, using the Marratech system.
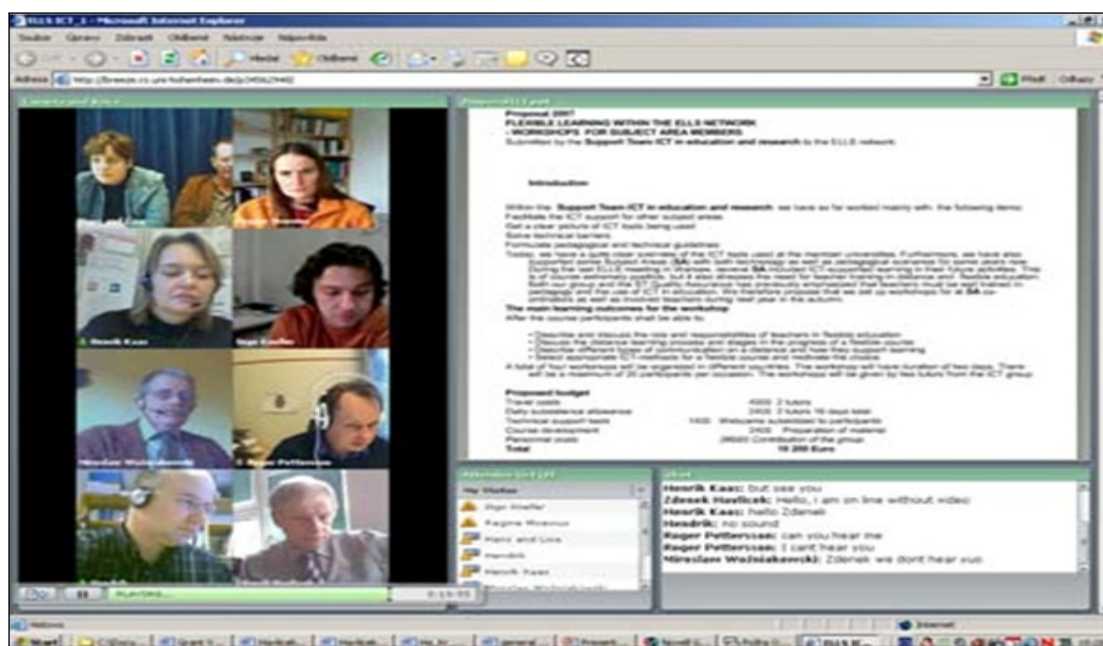
Figure 3: An example of a virtual discussion of a document, using the Adobe connect system.

Acrobat® Connect™ Pro (formerly Breeze system) is used (see Fig. 3), and has been tested with all partner universities of the ELLS network.

This software allows communicate, share presentations and multimedia right from desktop, and get feedback from participants. All participants are using any standard web browser (IE, Firefox, Opera) and the Adobe Flash Player runtime, already installed on over 98% of Internet-connected personal computers. The quality of the sound and picture when using the Adobe Connect system is very good since this system uses a Flash vector technology. It also makes it possible to record the virtual meeting. Our experience with this system is very positive. We found that well prepared virtual meetings bring savings in travel costs. Furthermore, any part of the recording of the meeting can be played back using the "bookmarks", which are automatically created when e.g. a slide in a presentation is changed.

Working group – a virtual meeting

A working group is a gathering of people whose individual members have a common goal. These people communicate and complement one another. Each member of the group lives in a specific social environment.

The working group is chaired by a leader who ensures the proper functioning of the group towards the implementation of the goal, while the other members focus on the tasks to be carried out. They contribute information, opinions and suggestions.
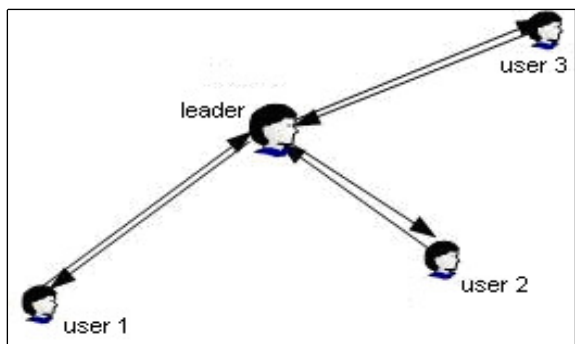
Figure 4: Dialogue.

In practical implementation of a meeting it is necessary that the leader looks after both the dialogue (Fig. 4) and the interaction of the participants (Fig. 5).

We believe it is essential that the leaders prepare their roles well, so that they can lay down the conditions for the group to carry out its tasks. The group members subsequently leave the virtual meeting better informed and/or trained - as shown in the diagram adapted after J. Vincent [5] – see Fig. 5. It must be emphasised that during a virtual meeting it is necessary to follow the same
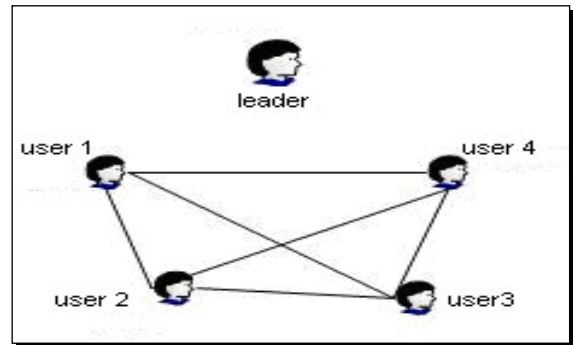
principles that are common for normal meetings,

Figure 5: Users interaction.

e.g. starting on time and maintaining the rules for talking (not to interrupt), etc.

We believe it is essential that the leaders prepare their roles well, so that they can lay down the conditions for the group to carry out its tasks. The group members subsequently leave the virtual meeting better informed and/or trained - as shown in the diagram adapted after J. Vincent [5] – see Fig. 5. It must be emphasised that during a virtual meeting it is necessary to follow the same principles that are common for normal meetings, e.g. starting on time and maintaining the rules for talking (not to interrupt), etc.

In order for a meeting of the group to be successful, it should adhere to the following rules:

- Start on time
- Make sure everybody knows the aim and programme of the meeting
- Appoint a person for recording the Minutes of the meeting
- Adhere to the structure of the discussion
- Pull everyone into active participation
- Keep to the programme and time
- Finish on time, positively, and with a comprehensive summary.

These principles are essential for the management of any meeting, and thus even for the virtual conferences.
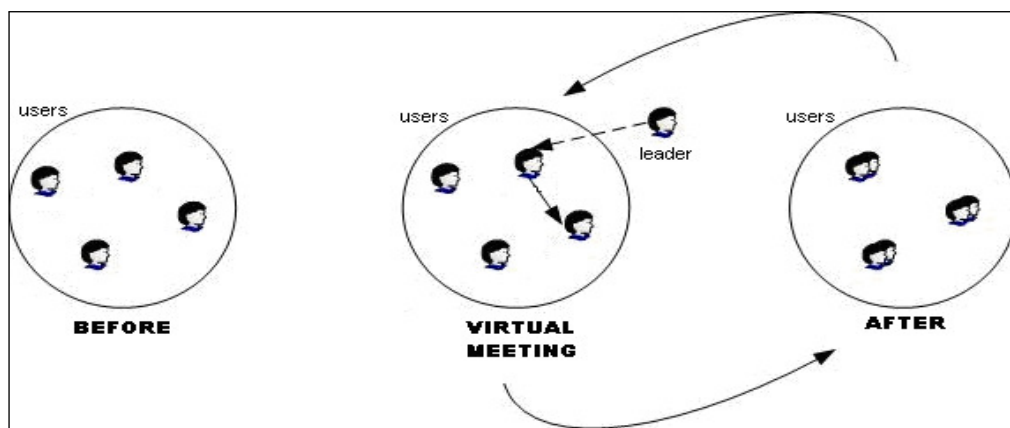
Figure 6: The purpose of a virtual discussion.

Conclusion

Support of virtual meeting is the most basic but also the most widespread usage of a videoconference. This does not represent only a replacement of a personal contact and reduction of the costs (and time) of travel, but also an opportunity for holdingsuch meetings much more frequently, that would be the case in real life.

Our experience based on ELLS support teams work is very positive. Equipment for videoconferencing is not expensive. Anybody can use Internet connection anywhere and use it to participate in a videoconference.

Our contribution emphasises the necessity of using the general principles for the management of a virtual meeting, because the modern ICT cannot guarantee good results unless the videoconference is well prepared in advance. During the virtual meeting the leader must follow the basic rules for the correct management of the discussion.

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Primary agricultural production can also expect expansion of videoconferences. Agriculture is a sector, whose production is carried out over very large areas. In this line of business it is often necessary to link up farmers from distant areas for a variety of consultations and advisory service on current or urgent topics, such as information on new technologies, and/or spread of pests. Videoconferences were found to be a very suitable medium for such meetings at short notice. Sharing of information in this way can help the rural sustainability.

If businesses in Europe were to replace only 20% of all business trips by video conferencing, we could save more than 22 million tons of CO_2 per year [3].

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Information Services and ICT Development in Agriculture of the Czech Republic

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Abstract

The paper presents results of KIT (Department of Information Technologies) research which maps the actual state and expected development trends of information and communication technologies in conditions of CR agriculture. It includes results of investigation realized in 2008 with connection to the actually carried out inquiry in the first half-year 2009.

Key words

Broadband, ADSL, FTTx, Wi-Fi, CDMA

Anotace

Příspěvek prezentuje výsledky výzkumu KIT PEF ČZU v Praze (Katedra informačních technologií), který mapuje aktuální stav a očekávané trendy rozvoje informačních a komunikačních technologií v podmínkách zemědělství ČR. Zahrnuje vybrané výsledky šetření realizovaného v roce 2008 s návazností na aktuálně prováděný průzkum v prvním pololetí 2009. Jsou zde prezentovány především vybrané výsledky z oblasti technického a programového vybavení (vybavenost pracovními stanicemi a mobilní technikou, instalované operační systémy), internetové konektivity s důrazem na vysokorychlostní připojení (broadband), intenzitu využívání internetu, používání internetových vyhledávačů a internetových informačních služeb v resortu (oficiální a ostatní resortní www portály).

Klíčová slova

Vysokorychlostní internet, ADSL, FTTx, Wi-Fi, CDMA

Introduction

Development of information society is represented at present first of all by a state of communication infrastructure which is an essential base for its functioning, further by a total level of technical infrastructure, a used software platform, a spectrum of supplied and used services, as well as an intensity of their use.

The paper's aim is to provide information on results of wide investigation of information and communication technologies in agricultural production businesses in the CR which was realized in the first half-year 2008. It means to analyze development of internet connectivity in rural regions (an absolute majority of entrepreneurial subjects operate here) with an emphasis on broadband; further to found out an actual state and expected development trends of ICT use in a context of the CR, the EU and other advanced countries outside the EU.

At present (the first half-year 2009) a consequential investigation is in progress which aims to specify selected interest circles, to verify ascertained trends and to update a real ICT development state in the department and in the countryside generally.

Objectives and methods

The research concurs till this time the widest investigation of ICT use in the department which was repeatedly realized in the period 2000 – 2003 by the Information and Consultancy Center (IPC) in cooperation with the Department of Information Technologies (KIT) of the Faculty of Economics and Management at the Czech University of Life Sciences (FEM CULS) in Prague when these surveys included almost 2 700 enterprises

(respondents) which represented almost 76 % of coverage of arable land in the CR.

By the survey in 2008, in total 667 responses were obtained. Selected conclusions are presented in this paper. The consequential research is actually realized through the first half-year 2009. It includes the already addressed and cooperating subjects and further it is completed with a selected group of businesses with use of MZe CR background data.

Respondents (entrepreneurial subjects) were sent by mail an accompanying letter with instructions, and a questionnaire which they could fill in and send back by mail. The questionnaire was also disposable for downloading on the internet (with a possibility of off-line filling and sending by e-mail back) and also on-line as a web-form. In both cases the agrarian WWW portal AGRIS (**http://www.agris.cz**) was used, which IPC in cooperation with KIT operates (a way of respondents´ answers see figure 1).
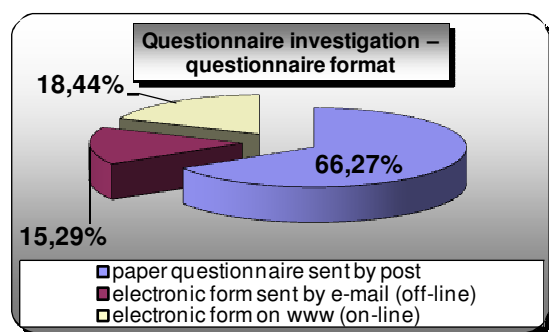
Figure 1: Questionnaire investigation – questionnaire format.

From the presented figure it is obvious that practically two thirds of respondents preferred „a classical"paper form of questionnaire to electronic forms (off-line, on-line) whose representation was in total only third (33,73 %). It shows evidence of a considerable conservatism of the target group regarding the investigation object.

Results and discussion

Technical and program equipment
Endowment of businesses with technical means was not investigated in details in term of HW parameters, nevertheless, in the observed respondents group the ratio of work stations (PC)

and notebooks 1 : 8, PDA facilities to PC 1 : 32. It represents a relatively low number of mobile techniques, however, which will probably increase gradually.

Operation systems installed in the work stations show generally practically the same structure which is characteristic for the entire CR, so more than 90 % representation of the family MS Windows systems. Regarding the supposed worse efficiency parameters of used technique there are more represented older versions (e.g. Windows 98) and minimally new versions (Windows Vista). Details are seen in the figure 2. More than half of business disposes of a computer network, concretely 57 %.
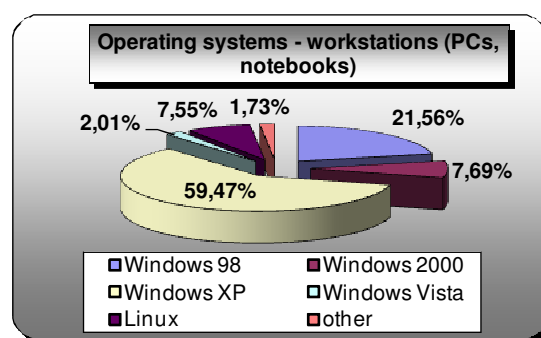

Figure 1: Questionnaire investigation – questionnaire format.

Internet connectivity
Development of high-speed technologies (broadband) shows itself here with an intense coming of ADSL (almost 35 %) together with wireless connection Wi-Fi (28 %). So, these technologies represents in total 63 % of accessible connectivity. Already only less than third of businesses (28 %) is till this time connected by slow technologies as Dial-Up and ISDN, however, which 5 years ago represented full 84 % (research 2003). A mobile connection takes over 8 %, however, which can represent a slow connection (GPRS) in combination with a quick one (CDMA). For these reasons within investigation in 2009, the attention will be paid to GPRS and CDMA separately. The actual connectivity is shown in the figure 3.

Just the representation of high-speed connection and its quality (parameters) are one of narrow places of enterprise development in regions as well as the country as such.
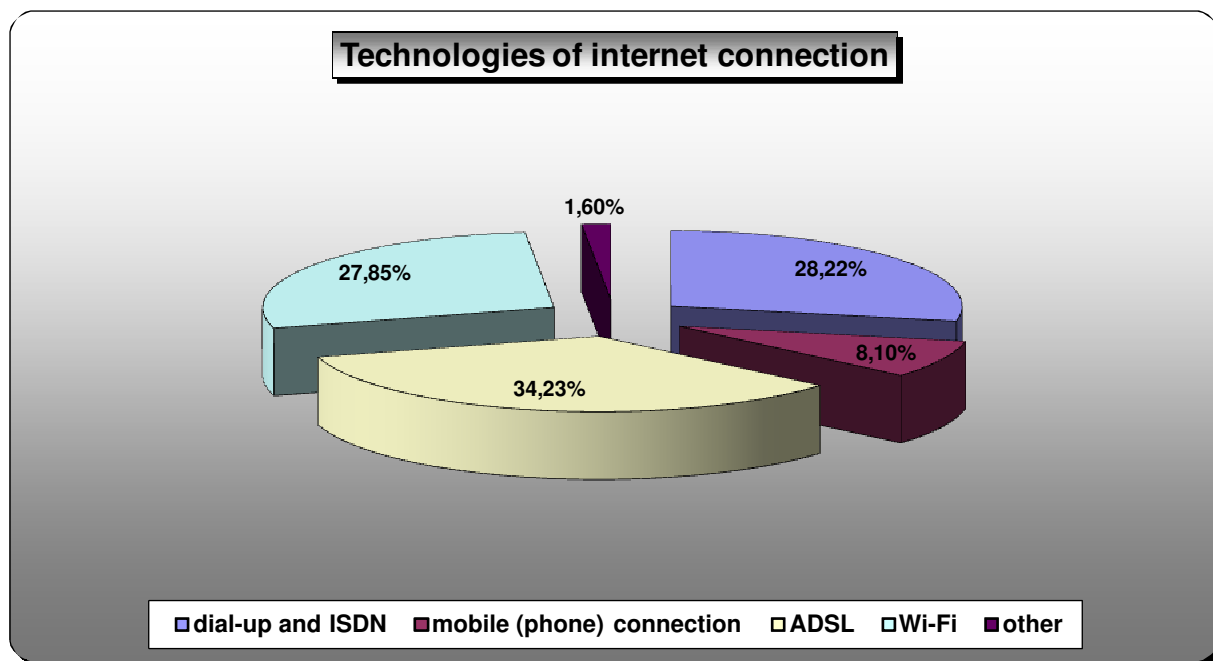
Technologies of internet connection

1,60%
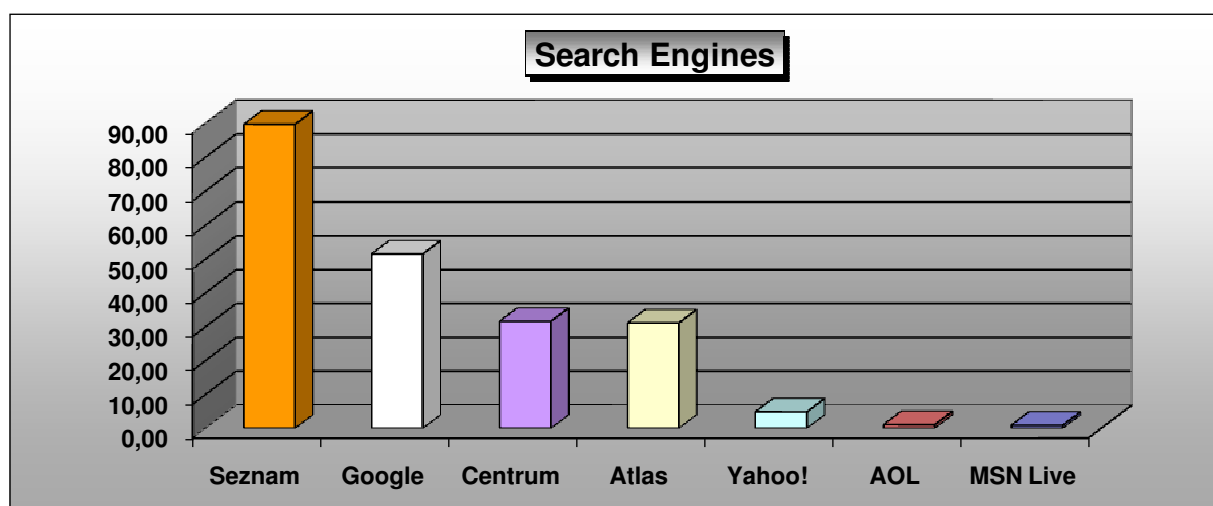
27,85%

28,22%

8,10%

34,23%

☐ dial-up and ISDN ☐ mobile (phone) connection ☐ ADSL ☐ Wi-Fi ☐ other

Figure 3: Technologies of internet connection.

Search Engines

90,00	
80,00	
70,00	
60,00	
50,00	
40,00	
30,00	
20,00	
10,00	
0,00	

Seznam Google Centrum Atlas Yahoo! AOL MSN Live

Figure 4: Search Engines.

Use of internet

The intensity of internet use by entrepreneurial subjects is relatively high, over 91 % of businesses present that they use the internet regularly, of it whole 85 % daily. Areas of the internet use are standard: e-mail (100 %), searching of www pages (96 %), e-banking (87 %). According to expectation, the worse is the use for purchase in internet shops (56 %), significantly lower is for example an operation of own www pages (only 24 % businesses). Firms do not feel here primarily a need of own www presentation as such, and the potential of use of other possibilities, as e.g. e-shop, is very small. An exception can be a supply of agri-

tourism services, or possibly of other activities and service outside agriculture.

A supposed finding is a standard-conservative behavior of respondent group towards a use of internet searching programs. The most used searching program is here according to expectation a domestic Seznam (almost 90 % respondents record it); with a gap Google follows (with 51 %), and other two domestic systems Atlas and Centrum (both with the same share 31 %). Other searching programs as Yahoo!, MSN Live and AOL are used just very little (a range 5 % to 1 %). Aggregate results are shown in the figure No. 4. Seznam.cz generally is for Czech users a synonym of internet,
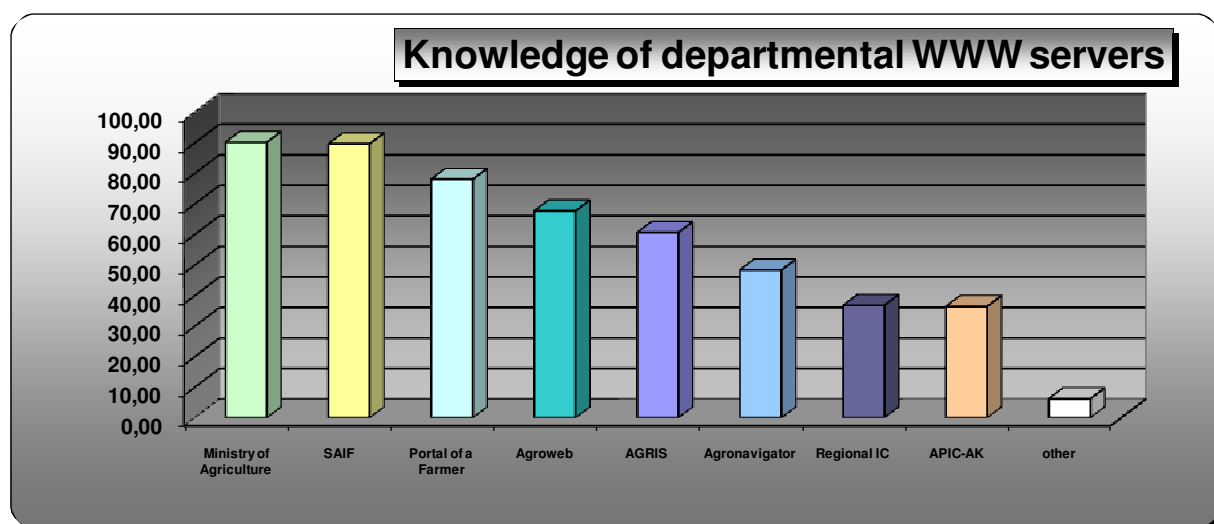
Figure 5: Knowledge of departmental WWW servers.

nevertheless, in the present globalization and a pressure of Google it can be expected that gradually there will be a shift towards the system Google. It will be interesting to observe changes after evaluation of data from the investigation 2009.

Information services

The research brought very interesting pieces of knowledge in the area of knowledge and use of branch (departmental) internet information sources. Here, among users the most known official departmental portals are MZe (MA - Ministry of Agriculture of the Czech Republic), SZIF (SAIF - State Agricultural Intervention Fund) and Portál farmáře (Farmer´s portal), followed by specialized information portals – Agroweb, AGRIS and Agronavigátor, followed by portals of the Agrarian Chamber Regionální KIS (Regional IC - Regional Information Centers) and APIC-AK (ACIC - Agrarian Consultancy and Information Centre) - see figure 5. Knowledge of the first group of portals moves from 78 to 90 % respondents; the second group is created by portals Agroweb and Agris with values above 60 %, with a gap then other portal solutions follow. Other information sources are mentioned only very little (in total 6,22 %). Knowledge of particular information portals in the department is unbalanced and moves in a range from 36,4 % (APIC-AK) to 90,16 % (MZe).

In evaluation of the mentioned information sources use it was found out that all these portals in case of knowledge by users are relatively intensively used. The per cent of their use moves from 68 % Agronavigátor) to almost 96 % (SZIF) - details are in the figure 6.

In case of official departmental portals (MZe, SZIF and Portál farmáře), their knowledge and use is given, except a content filling (information content) also by other functions in the area of subsidies, submitting of projects etc. which other information sources cannot offer and do not offer, or only immediately.

From this evaluation results we were pleased with a position of the portal AGRIS which is developed and non-commercially operated by KIT and IPC FEM CULS in Prague (see the figure 6).

Conclusions

In the foregoing text, selected results of investigation of the ICT development state in agricultural enterprises were presented and partially discussed. However, here a key factor is the internet collectivity and its quality.

Despite technology development and European and world trend the internet connectivity did not develop sufficiently fast towards a transition to the high-speed connection. In spite of that through the past period a relatively substantial shift was recorded towards broadband (including agricultural businesses) which first of all technologies ADSL and Wi-Fi represent. CR specifics, showing themselves significantly in the rural area and also determines business sphere operating here (a significant , maybe a unique position of Wi-Fi, contrary to a relatively low share of ADSL, a minimal development of FTTx, a massive decrease in number of fixed lines, etc.), will probably outlast still.
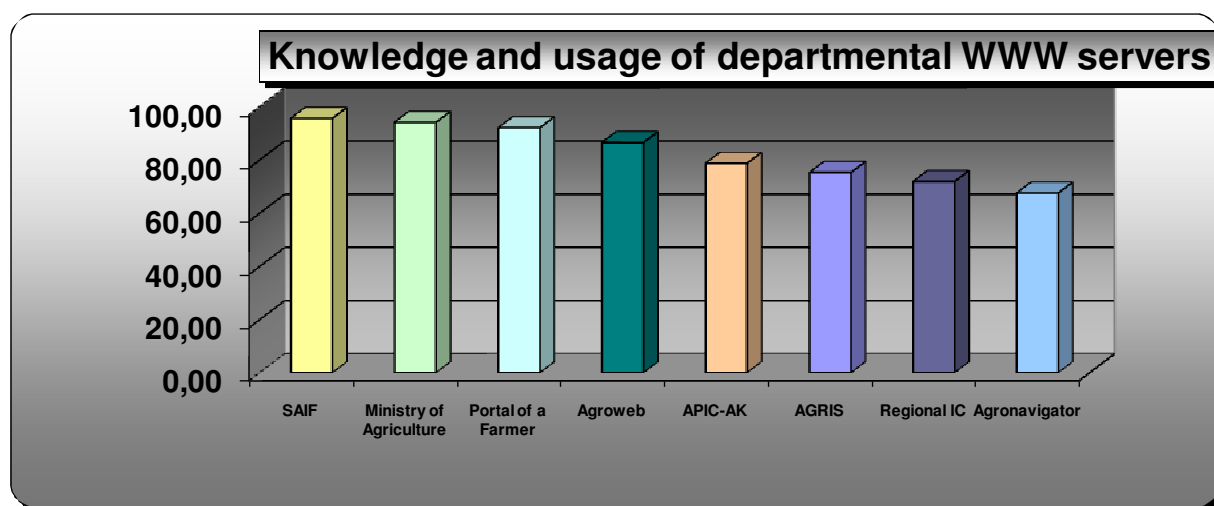
Figure 6: Knowledge and usage of departmental WWW servers.

A solution could be brought partially by the EU intention to give financial meant for broadband development in the country (primarily in the competence of the Ministry of Agriculture of the CR. A basic limiting condition of information society development is a high-speed connectivity. Unfortunately, in the CR conditions there is completely missing a national strategy of high-speed connection development for several years. This important area, to which a considerable attention is paid world-wide but also in frame of the EU, was together with a cancellation of MI ČR (the Ministry of Informatics of the CR) practically completely omitted and left without any conception and support. The result is a deepening of digital abyss between the town and the country.

The CR should fast to adopt a conception and subsequently to start a realization of high-speed networks sufficiently covering rural areas where the high-speed connectivity has not been ensured yet, or where their parameters don't conform.

If we will consider a perspective of the expected use, the technological solution should be supported by FTTx technologies which would create a base of communication infrastructure. They would be in localities, where their use is extremely costly, combined with fixed radio or mobile networks (high-speed).

Of course, the all-area coverage of the countryside would have a very high importance, however, when it has not been achieved with the present technologies yet, it will be reasonable to use new solutions.

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