

## Calculation of the EU feed subsidies by type of animal products

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This paper is an excerpt of a broader study made in 2012 for an Indian law company focusing on the EU feed subsidies to dairy cows but contains data allowing to extend the methodology to the feed subsidies to other animal products. It concludes that in 2010 the EU feed subsidy was around €17 per tonne of milk equivalent.

### **2.5 – The specific direct payments to the feed consumed by dairy cows**

As the direct payments in the new EU12 Member States (MS) were immediately fully decoupled, in the SAPS (single area payment scheme), from their integration in the EU in May 2004, we are obliged to follow a different approach to identify the subsidies granted to the feedstuffs from EU origin consumed by dairy cows. It is easier to identify them in the EU15 as the direct payments to feed products integrated in the SPS (single payment scheme) have been based on their amounts from 2000 to 2002. We will therefore begin by the EU15 but it will be a long process.

#### **2.5.1 – The direct payments to feed in the EU15**

We have to assess first the feed subsidies to all animal products, which cover those to feed cereals and protein feed of EU origin, and then to identify the feed concentrates attributable to dairy cows and the feed consumed on farm.

##### **2.5.1.1 – The direct payments to the EU15 feed cereals**

Annex 7 of the Council regulation 1782/2003 of 29 September 2003 states that the direct payments to cereals will be transferred to the SPS on the basis of the average acreage from 2000 to 2002 (37,1 million ha, rice excluded) multiplied by the 2002 yield (5.66 t/ha) – i.e. 210.043 Mt –, multiplied by 63 €/t, i.e. €13.233 billion.

However five MS – France, Spain, Greece, Finland and the Netherlands – have begun to transfer their direct payments (DP) to COPs (cereals, oilseeds, pulses) only from 2006 and France and Spain have kept decoupled 25% of the DP to their COPs up to 2009, but the Health Check decision of 22 November 2008 of the EU Council has obliged all MS to transfer the COP payments to the SPS in 2010. Nevertheless as the payments are made in December the COP payments paid in December 2005 correspond to the FY 2006 and those paid in December 2010 correspond to the FY 2011. And, as the average share of cereals in the DP to COPs from 2000 to 2004 has been of 85.91% (against 10.67% for oilseeds and 3.42% for pulses) we apply these percentages to distribute the remaining coupled DP from 2005 to 2010 between cereals, oilseeds and pulses.

Table 87 – EU15 Member States having kept coupled direct payments to COPs from CY 2006 to 2009

€ million	2005	2006	2007	2008	2009
France	4896	1103	1084	1089	1085
Spain	1591	365	347	355	350
Greece	279				
Finland	269				
Netherlands	164				
Total	7199	1468	1431	1444	1435
Of which to cereals (85.91%)	6185	1261	1229	1241	1233

" to oilseeds (10.67%)	768	157	153	1541	153
" to pulses (3.42%)	246	50	49	49	49

Source: Eurostat and EAGGF annual reports

Given that Eurostat provides the still coupled "subsidies on agricultural products" to cereals – those created by the CAP reforms of 1992 and 1999 and notified in the WTO 'blue box' – and that these subsidies include export refunds, we have first to identify those granted to the EU15 cereals, including to those in processed products of Non-Annex 1, to assess the coupled direct payments (DP) to cereals.

Table 88 - Export refunds on EU15 cereals from 2000 to 2010

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Direct refunds	824	260	99	176	72	120	122	40	6	1	-
Non- Annex 1	79	62	39	26	30	42	18	18	7	-	-
Total	903	322	138	202	102	162	140	58	13	1	-

However we have to add to the €13.233 billion transferred to the SPS from 2005 the €1.607 billion corresponding to the share of the €1.778 billion of set-aside subsidies to all COPs (cereals, oilseeds, pulses) going to cereals on average in the 2000-02 period, which gets to €14.840 billion (table 88). Indeed the compulsory set-aside in 2000-02 was applied to the acreage of all COPs and, if the new CAP has created specific set-aside entitlements getting the corresponding aid only after their activation through setting aside eligible lands, article 53 of the Council Regulation n° 1782/2003 of 29 September 2003 states that "*The farmer shall receive an entitlement per hectare (hereinafter referred to as 'set-aside entitlement') which is calculated by dividing the three-year set-aside average amount by the three-year average number of hectares set-aside*". As it was necessary to activate the set-aside entitlements to get the normal SPS, and as, furthermore, the set-aside and set-aside payment have been abolished from 2007 on, it is logical to distribute the actual set-aside payments of the 2000-02 period among cereals, oilseeds and pulses according to the direct payments received by each of them in that period. On the other hand the set aside payments are not considered "subsidies on agricultural product" but belong to the category of "other subsidies on production" so that we have to evaluate them separately from 2000 to 2004, before their integration in the SPS from 2005 on.

Table 89 – EU15 coupled direct aids to cereals from civil year 2000 to 2010

1000 t, € million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EU15 cereals prod*	213819	199735	211639	187158	225814	199510	195482	195571	226777	212037	202983
Coupled DP /cer.	11823	12321	12696	12425	12775	5640	1595	1481	1547	1634	478
- export refunds	-903	-322	-138	-202	-102	-162	-140	-58	-13	-1	-
Net coupled DP	10920	11999	12558	1222	12673	5478	1455	1423	1534	1633	478
+ DP/set aside	1570	1267	1590	1414	1620						
Net coupled DP/cer	12490	13266	14148	13637	14293	5478	1455	1423	1534	1633	478

Source: Eurostat. \* Cereals production without rice

As the average weight of feed cereals in total cereals production (without rice) was of 55.8% from 2000 to 2002, finally the direct payments and set aside payments transferred to the SPS from 2005 on were of €14.840 billion. However if the remaining coupled subsidies to cereals published in the EAGF reports are net of modulation, this is not the case for the cereals DP transferred to the SPS as for all other DP transferred to the SPS which is reduced globally.

Table 90 – Share of direct aids to cereals in the SPS from 2005 to 2010

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cereals*:1000 ha	37319	36542	37469	36451	37129						
Yield q/ha	57.3	54.7	56.6	51.3	60.8						
Grain prod° Mt	213820	199735	211639	187158	225814	199510	195482	195571	226777	212037	202983
Cereal DP to SPS	37110 ha x 5.66 t/ha x 63 €/t = €13.233 bn + €1.607 bn (set aside) = €14.840 from 2005 to 2010										
"						14840	14840	14840	14840	14840	14840
Minus coupled DP						5478	1455	1423	1534	1633	478
Actual DP in SPS						9362	13385	13417	13306	13207	14362
Modulation index						0.9801	0.9735	0.9659	0.9657	0.9523	0.9436
Net SPS to cereals						9176	13030	12959	12850	12577	13552
Total DP to cereals	12490	13266	14148	13637	14293	14654	14485	14382	14384	14210	14030
Cereals DP in €/ton	58.41	66.42	66.85	72.86	63.30	74.45	74.10	73.54	63.43	67.02	69.12

Source: Eurostat. \* Cereals without rice

Given that Eurostat provides the volume of cereals used as feed, we can deduct the annual percentages of EU15 cereals used as feed and use these percentages to get the coupled DP to EU15 cereals from 2000 to 2010. We see that the average subsidies to feed cereals were of €8.303 billion from 2000 to 2010.

Table 91 – EU15 direct aids to feed cereals from civil years 2000 to 2010

1000 t, € million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EU15 cereals*	213819	199735	211639	187158	225814	199510	195482	195571	226777	212037	202983
" for feed	110208	117482	121076	125373	115718	127071	126179	124959	127966	133921	131488
% of feed	51.54%	58.82%	57.21%	66.99%	51.24%	63.69%	64.55%	63.89%	56.43%	63.16%	64.78%
Net DP/cereals	12490	13266	14148	13637	14293	14654	14485	14382	14384	14210	14030
" to feed	6437	7803	8094	9135	7324	9333	9350	9189	8117	9373	9613

Source: Eurostat. \* Cereals without rice

### **2.5.1.2 – The direct payments to EU15 protein feed**

DG Agriculture gives the EU border prices of oilseeds oils and meals from 2000 to 2010<sup>1</sup>, from which we can distribute the percentage values of oilseeds attributable to oilseeds meals and oils (table 92). We will assess also the direct payments to oilseeds oils as some of them are used in compound feed.

The following tables present the calculations of direct payments to oilseeds meals and pulses used as feed. Council regulation No 1782/2003 of 29 September 2003 states that the direct payments to oilseeds and pulses will be transferred to the SPS on the basis of their average acreage from 2000 to 2002 multiplied by the same average cereal yield of 2002 (5.66 t/ha), and not by their own yields which are much lower.

Table 92 – The relative share of the EU oil and meal prices of soybean, rapeseed and sunflower

€/tonne	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010*	Average
Soybean oil and meal prices												
Oil price	368,14	397,49	468,45	489,81	499,78	438,50	476,85	639,83	847,31	608,65	675,6	492,53
Meal "	216,59	225,03	211,53	174,15	219,47	185,68	171,23	219,92	291,53	296,13	273,27	207,04
Total	584,73	622,52	679,98	663,96	719,25	624,18	648,08	859,75	1138,84	904,78	948,87	699,57
% oil	62.96%	63.85%	68.89%	73.77%	69.49%	70.25%	73.58%	74.42%	74.40%	67.27%	71.20%	70.40%
% meal	37.04%	36.15%	31.11%	26.23%	30.51%	29.75%	22.42%	25.58%	25.60%	32.73%	28.80%	29.60%
Rapeseed oil and meal prices												
Oil price	376,26	446,60	512,81	530,89	549,09	538,69	631,95	703,28	897,18	615,85	673,65	539,69
Meal "	141,58	153,47	132,99	138,51	126,32	105,97	107,81	154,52	181,77	147,97	162,98	129,49
Total	517,84	600,07	645,8	669,4	675,41	644,66	739,76	857,8	1078,95	763,82	836,63	669,18
% oil	72.66%	74.42%	79.41%	79.31%	81.30%	83.56%	85.43%	81.99%	83.15%	80.63%	80.52%	80.65%
% meal	27.34%	25.58%	20.59%	20.69%	18.70%	16.44%	14.57%	18.01%	16.85%	19.37%	19.48%	19.35%

<sup>1</sup> Except for soybean and sunflower meals from 2003 to 2006 for which we have relied on "USDA, Oilseeds: world market and trade" monthly review.

Sunflower oil and meal prices												
Oil price	424,57	541,47	634,88	519,50	551,37	540,20	523,78	739,76	1006,03	613,88	702,00	566,45
Meal "	107,22	116,60	101,70	99,36	119,79	96,46	97,17	153,14	176,15	139,07	171,93	114,88
Total	531,79	658,07	736,58	618,86	671,16	636,66	620,95	892,9	1182,18	752,95	873,93	681,34
% oil	79.84%	82.28%	86.19%	83.94%	82.15%	84.85%	84.35%	82.85%	85.10%	81.53%	80.33%	83.14%
% meal	20.16%	17.72%	15.81%	16.06%	17.85%	15.15%	15.65%	17.15%	14.90%	18.47%	19.67%	16.86%

Source: DG Agriculture; \* average of the first semester.

In order to distribute the set-aside payment between the three oilseeds – rapeseed, sunflower seed and soybean – table 93 presents their acreage from 2000 to 2004.

Table 93 – Share of each oilseed in the total oilseed area of the EU15 from 2000 to 2004

1000 ha	2000	2001	2002	2003	2004
Rapeseed area	2994	2981	3067	3031	3222
Sunflower area	1904	1881	1638	1740	1586
Soybean area	351	378	245	250	228
Total area	5247	5240	4950	5021	5036
Share of rapeseed	57.06%	56.89%	61.96%	60.37%	63.98%
Share of sunflower	36.29%	35.90%	33.09%	34.65%	31.49%
Share of soybean	6.69%	7.21%	4.95%	4.98%	4.53%

Table 94 uses the relative percentages of the acreage of the three oilseeds to distribute the oilseeds direct payments (DP) between them and shows also the share of these DP going to oilseeds meals and oils, taking into account their relative weights as shown in table 93.

Table 94 – Coupled (blue box) direct payments to oilseeds and oilseeds meals and oils: 2000-04

	2000	2001	2002	2003	2004
Oilseeds direct payments	1318	1984	1846	1200	1361
" set aside "	204	219	238	241	170
Total oilseeds "	1522	2240	2059	1441	1531
" of which: to rapeseed	868	1274	1276	870	980
" : to sunflower	552	804	681	499	482
" : to soybean	102	162	102	72	69
DP to rapeseed meal	237	348	326	180	183
DP to sunflower meal	111	142	94	80	86
DP do soybean meal	38	59	32	19	21
Total DP to oilseeds meals	386	549	452	279	290
DP to rapeseed oil	631	926	950	690	797
DP to sunflower oil	441	662	587	419	396
DP do soybean oil	64	103	70	53	48
Total DP to oilseeds oils	1136	1691	1607	1162	1241

Table 95 shows the calculation of the direct payments to oilseeds and oilseeds meals transferred to the SPS from 2005 to 2010. However, as there is some oilseed oil in compound feed, we add the DP transferred to oilseeds oils (table 96) even if they apply to the EU12 also.

Table 95 – EU15 DP to oilseeds meals, with set-aside DP, transferred to SPS from 2005

€ million	2000	2001	2002	From 2005 to 2010
Rapeseed area: 1000 ha	2994	2981	3067	Average 2000-02: 3014 x 5.65 t/ha (cereal yield) x 63 €/t = €1.073 billion
Direct payment to rapeseed meal transferred to the SPS from 2005: (237 + 348 + 326)/3 = €304 million				
Direct payment to rapeseed oil transferred to the SPS from 2005: (631 + 926 + 950)/3 = €836 million				
Sunflower area: 1000 ha	1904	1881	1638	Average 2000-02: 1808 x 5.65 t/ha (cereal yield) x 63 €/t = €644 million
Direct payment to sunflower meal transferred to the SPS from 2005: (111 + 142 + 94) = €116 million				
Direct payment to sunflower oil transferred to the SPS from 2005: (441 + 662 + 587)/3 = €563 million				
Soybean area: 1000 ha	351	378	245	Average 2000-02: 325 x 5.65 t/ha (cereal yield) x 63 €/t = €116 million
Direct payment to soybean meal transferred to SPS from 2005: (38 + 59 + 32) = €43 million				
Direct payment to soybean oil transferred to the SPS from 2005: (64 + 103 + 70)/3 = €79 million				
Direct payment/set aside	204	219	238	Average: €220 million
Total direct payments to oilseeds transferred to SPS from 2005: 1,073 + 644 + 116 = €1.833 billion + 220 (set-aside) = €2.053 bn				
Total direct payments to oilseeds meals transferred to SPS from 2005: 304 + 116 + 43 = 463 + 45 = €508 million *				
Total direct payments to oilseeds oils transferred to SPS from 2005: 836 + 563 + 79 = 1408 + 137 = €1545 million *				
* The DP transferred are not the average of the 3 years but rely on the 2002 yield: we have to add €137 M to oils and €45 M to meals.				

Table 96 – Direct payments to oils and fats used in the compound feed transferred to SPS from 2005

In 1000 tonnes	2000	2001	2002	Average	2003	2004
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EU production volume of oilseeds	13740	13279	13077		12775	15401
Of which rapeseed	8920	8850	9305		9258	11837
" sunflower seed	3389	3016	2779		2686	2725
" soybean seed	1144	1237	817		580	715
" flax seed	287	176	176		251	124
Rapeseed oil (42.9% of seed)	3827	3797	3992		3972	5075
Sunflower oil (44.9% of seed)	1522	1354	1253		1206	1224
Soybean oil (18% of seed)	206	223	147		104	129
Flax oil (41% of seed)	118	72	72		103	51
Total oilseeds oil	5673	5446	5464	5528	5385	6479
Oils and fats in compound feed	2151	1936	1932	2006	1998	2202
% of oils & fats	37.92%	35.55%	35.36%	36.29%	37.10%	33.99%
Total DP to oilseeds oils	1136	1691	1607		1162	1241
Direct payments to oils & fats in compound feed	431	601	568		431	422
DP to oils & fats in compound feed transferred to SPS	From table 88: €1545 million x 36.29% = €561 million					

Table 97 shows the coupled DP to pulses from 2000 to 2004 and the DP transferred to the SPS from 2005 to 2010. The table presents also the grass silage premium transferred to SPS.

Table 97 – Coupled direct payments to pulses and grass silage transferred to SPS from 2005

	2000	2001	2002	2003	2004	From 2005
DP to pulses	524	450	515	474	507	
Set aside DP to pulses	82	50	66	57	63	
Total pulses DP	606	500	581	531	570	
Pulses area: 1000 ha	1112	1184	1216	Average 2000-02: 1142		
Pulses DP transferred to the SPS from 2005: 1.142 million ha x 5.65 t/ha (cereal yield) x 63 €/t = €406 million						
Grass silage premium: average of 2000 to 2002: €64 million						

Table 98 presents other coupled direct payments to protein crops: to dried fodder, protein premium, skimmed milk powder to feed calves and occasional aid to fodder transport. However, by lack of data, we cannot take into account several subsidies appearing in pillar 2 of the CAP allegedly devoted to rural development and co-financed between Member States and the EU.

Table 97 – Other coupled (blue and amber boxes) direct payments to protein feed

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Dried fodder DP	313	306	388	389	390	294	150	154	136	127	122
Protein premium					70	70	63	43	43	33	43
Skimmed milk for calf	354	217	263	345	267	243	72	11	5	-	-
Aid to fodder transport				20	39						
Other feed protein DP	667	523	651	754	766	607	285	208	184	160	165

At least we can include the French 'grass subsidy' since 1993 on about 3.5 million ha, notified as an agri-environmental measure, with a rate of 46 €/ha up to 2001 and 70 €/ha from 2002, and a total amount of €161 million up to 2001, €245 million in 2002 and €260 million since 2003, and totally financed by France since 2007. However, as grass subsidy is an input subsidy it should have been notified as a coupled subsidy of the amber box (AMS).

Table 99 recapitulates the EU15 total DP transferred to the SPS from 2005 to 2010.

Table 99– EU15 total direct payments to protein feed transferred to the SPS from 2005

	2005	2006	2007	2008	2009	2010
Oilseeds meals	553	553	553	553	553	553
Pulses	406	406	406	406	406	406
Grass silage	64	64	64	64	64	64
Total	1023	1023	1023	1023	1023	1023

Finally table 100 shows all the DP, coupled and transferred to the SPS, from 2000 to 2010.

DP to protein feed of EU15 origin reached an average of €1.742 billion from 2000 to 2010. However all decoupled DP in the SPS are subjected to modulation.

Table 100 – EU15 total coupled and SPS payments to protein feed and oils from 2000 to 2010

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Direct payments which have been transferred to the SPS from 2005 to 2010											
Oilseed meals	386	549	452	279	290	553	553	553	553	553	553
Pulses	606	500	581	531	570	406	406	406	406	406	406
Grass silage	59	59	75	74	70	64	64	64	64	64	64
Sub-total	1051	1108	1108	884	930	1023	1023	1023	1023	1023	1023
Modulation multiplier						0.9801	0.9735	0.9659	0.9657	0.9523	0.9436
Net transfer to SPS	1051	1108	1108	884	930	1003	996	988	988	974	965
Direct payment which have remained coupled up to 2010											
Dried fodder DP	313	306	388	389	390	294	150	154	136	127	122
Protein premium					70	70	63	43	43	33	43
Skimmed milk for calf	354	217	263	345	267	243	72	11	5	-	-
Aid to fodder transport				20	39						
Sub-total	667	523	651	754	766	607	285	208	184	160	165
All direct payments to protein feed											
Total	1718	1631	1759	1638	1696	1610	1281	1196	1172	1134	1130
French grass premium	161	161	245	260	260	260	260	260	260	260	260
Total DP/protein feed	1879	1792	2004	1898	1956	1870	1541	1456	1432	1943	1390
Direct payment to vegetable oil in compound feed transferred to the SPS from 2005											
From table 89	431	601	568	431	422	561	561	561	561	561	561

### **2.5.1.3 – Total direct payments to EU15 feed**

Table 101 recapitulates all the EU15 subsidies to feed of EU15 origin from 2000 to 2010. They have reached an average of €10.795 billion from 2000 to 2010.

Table 101 – EU15 total coupled and SPS payments to feed from 2000 to 2010

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Feed cereals	6437	7803	8094	9135	7324	9333	9350	9189	8117	9373	9613	8524
Protein feed	1879	1792	2004	1898	1956	1870	1541	1456	1432	1943	1390	1742
Vegetable oil	431	601	568	431	422	561	561	561	561	561	561	529
Total	8747	10196	10666	11464	9702	11764	11452	11206	10110	11877	11564	10795

We have now to distribute these feed subsidies among the different animals having consumed the feed, and particularly to the dairy cows. Before, however, we have to identify the direct payments having benefitted to feed in the EU12.

### **2.5.2 – The direct payments to feed in the EU12**

The weight of dairy cows in total bovine cattle is much higher in the EU12 than in the EU15: in 2007 – last year available for data – they represented 80.9% of bovine heads older than 2 years against 52.9% in the EU15 and 7.5% of all bovine heads in the EU15 against 44.5% in EU12. Dairy cows plus heifers older than 2 years represented 50.7% of all bovine heads in the EU12 against 34.6% on average in the EU27 and 31.6% in the EU15. However the total fodder area – which includes fodder crops and grass: fodder roots and brassicas, forage plants (including temporary grass, green maize, leguminous plants) and permanent grassland and meadows – accounted in 2007 for only 31% of the used agricultural area (UAA) or 14.842 M ha over 47,939 M ha in the EU12, against 47.7% in the EU15 (59.356 M ha over 124.546 M ha) and 43% in the EU27 (74.198 M ha over 172.485 M ha). This is because the SPS is decoupled from production so that arable crops generate more revenues than pastures.

Table 102 – The direct payments coming from the SAPS to the EU12 feed

	2005*	2006	2007	2008	2009	2010**
Average SAPS per hectare						
SAPS payments: € 1000	1449183	1721334	2082983	2974387	3723437	4460928
Area under the SAPS (1000 ha)	29261	29452	29486	40860	40415	40415
SAPS in €/ha	49.5	58.4	70.6	72.8	92.1	110.4
SAPS to feed cereals and to fodder area other than cereals						
Fodder area (1000 ha)	15184	15492	15799	15799	15799	15799
SAPS to fodder: € 1000	751608	904733	1115409	1150167	1455088	1744210
Feed cereals area (1000 ha)	10605	12305	14546	9007	9653	10735
SAPS to feed cereals: € 1000	524948	718612	1026948	655710	889041	1185144
SAPS to oilseeds meals of EU12 origin						
Rapeseed area (1000 ha)	1274	1483	2287	2334	2404	2404
SAPS to rapeseed area: € 1000	63063	86607	161462	169915	221408	265402
SAPS to rape meal: € 1000	9182	12610	29079	28733	42710	51276
Sunflower seed area (1000 ha)	647	695	2045	2182	1393	1393
SAPS to sunflower area: € 1000	32027	40588	144377	158850	128295	153787
SAPS to sunflower meal: € 1000	5217	6612	24746	23700	23696	28189
Soybean seed area (1000 ha)	54	58	182	88	96	96
SAPS to soybean area: € 1000	2673	3387	12849	6406	8842	10598
SAPS to soybean meal: € 1000	692	877	3318	1619	2883	2961
Total SAPS to oilseed meals: € 1000	15091	20099	57143	54052	69289	82426
SAPS to pulses						
Pulses area	243	253	336	276	188	188
SAPS to pulses: € 1000	12029	14775	23722	20093	17315	20755
Total SAPS to feed: € 1000						
	1303676	1658219	2223222	1880022	2430733	3032535

Source: Eurostat. \* we have used the same ratio of meal value to oilseed value as in 2006; \*\* we have used the same area as in 2009 when the data was lacking for 2010.

As the SAPS (single area payment scheme) provides the same direct aid to all hectares independently of their production – cereals, oilseeds, pulses and all other crops or permanent pasture – we can derive in table 102 the SAPS subsidies given to dairy cows for fodder other than concentrates and to feed cereals, oilseeds meals and pulses. To ratio of meal value to the oilseed value was already elaborated in table 92. Naturally we have kept only the subsidies to the EU10 (EU12 minus Bulgaria and Romania) from 2005 to 2006 and to EU12 from 2007 to 2010. Even if the EU10 joined the EU15 in May 2004, the first direct payments were only released in the 2005 budget.

However, beyond the SAPS payments we have to identify also the share of the CNDPs (complementary national direct payments) having benefitted to dairy farmers and dairy cows feed.

Table 103 – CNDPs payments with an impact on dairy aids and dairy feed

€ 1000	2005	2006	2007	2008	2009	2010
Specific CNDPs for dairy and dairy cows feed						
Dairy premium and dairy cows aids	60795	109148	328459	303179	325528	280759
Extensification premium	7336					1961
Protein crops and grain legumes	1547	2719		1108	1115	1528
To fodder area		5003	264484	205916	216905	1263
To arable crops	508213	479200	457256	510939	63468	71515
Sub-total	577891	596070	1050199	1021142	607016	357026
Non specified complements to SAPS and SPS						
Complement to SAPS	874943	978567	1047493	1021991	1385161	1298936
Complement to SPS (Slovenia+Malta)			68550	57132	45642	33210
Sub-total	874943	978567	1116043	1079123	1430803	1332146
Total CNDP identified with an impact on dairy subsidies and dairy cows feed						
Total identified	1452834	1574637	2166242	2100265	2037819	1689172
Total CNDP	1806609	1801412	2522044	2742556	2530654	2280117
Other CNDP	353775	226775	355802	642291	492835	590945

Sources: CNDPs payments transmitted by DG Agriculture.

The table distributes the EU12 CNDP between those to dairy farmers and to feed and the table 104 distributes the direct payments between energy and protein feeds.

Table 104 – Distribution of CNDP to EU12 direct payments and feed

	2005	2006	2007	2008	2009	2010
Direct aids to dairy farmers						
In €1000	68131	109148	328459	303179	325528	282720
Additional CNDP to SAPS per hectare						
CNDP to SAPS and SPS: € 1000	874943	978567	1116043	1079123	1430803	1332146
Area under the SAPS (ha)	29261138	29451835	29486392	40860477	40414617	40414617
CNDP-SAPS-SPS in €/ha	29.9	33.2	37.8	26.4	35.4	33.0
Share of areas of feed cereals, oilseeds and pulses in total arable areas, areas in 1000 ha						
Fodder crops	2868	2868	3722	3722	3722	3722
Feed cereals area	10605	12305	14546	9007	9653	10735
Rapeseed area	1274	1483	2287	2334	2404	2404
Sunflower seed area	647	695	2045	2182	1393	1393
Soybean seed area	54	58	182	88	96	96
Pulses area	243	253	336	276	188	188
Sub-total	15691	17662	23118	17609	17456	18538
Total arable crops	24544	24785	35861	36100	36407	36430
% of fodder area in arable crops area	63.93%	71.26%	64.47%	48.78%	47.95%	50.89%
Other CNDP aids to feed						
In CNDP to arable crops for feed	324901	431478	294793	249236	30433	36394
CNDP to fodder areas		5003	264484	205916	216905	1263
Protein crops and grain legumes	1547	2719		1108	1115	1528
Sub-total	326448	439200	559277	456260	248453	39185

Table 105 – EU12 total direct payments to feed from 2000 to 2010

€ 1000	2005	2006	2007	2008	2009	2010
Direct payments to energy feed						
SAPS to fodder	751608	904733	1115409	1150167	1455088	1744210
SAPS to feed cereals	524948	718612	1026948	655710	889041	1185144
Total SAPS to feed	1303676	1658219	2223222	1880022	2430733	3032535
CNDP to arable crops for feed	324901	431478	294793	249236	30433	36394
CNDP to fodder areas		5003	264484	205916	216905	1263
Sub-total energy feed subsidies	1628577	2094700	2782499	2335174	2678071	3070192
Direct payments to protein feed						
SAPS to oilseed meals	15091	20099	57143	54052	69289	82426
SAPS to pulses	12029	14775	23722	20093	17315	20755
Protein crops and grain legumes	1547	2719		1108	1115	1528
Sub-total protein feed subsidies	28667	37593	80865	75253	87719	104709
Total direct payments to feed						
	1657244	2132293	2863364	2410427	2765790	3174901

### **2.5.3. – Total direct payments to EU feed from 2000 to 2010**

Finally table 106 summarizes the total EU payments to feed, from EU15 and EU12, distinguishing between energy and protein feed, without incorporating the payments to vegetable oil into the energy feed at this stage because it is used only in compound feed and not in on farm feed.

Table 106 – EU total payments to feed from 2000 to 2010

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
EU15 energy	6437	7803	8094	9135	7324	9333	9350	9189	8117	9373	9613	8524
EU12 energy						1629	2095	2782	2335	2678	3070	1326
EU energy feed	6437	7803	8094	9135	7324	10962	11445	11971	10452	12051	12683	9850
EU15 protein	1879	1792	2004	1898	1956	1870	1541	1456	1432	1943	1390	1742
EU12 protein						29	38	81	75	88	105	37
EU protein feed	1879	1792	2004	1898	1956	1919	1579	1537	1507	2031	1495	1779
Vegetable oil	431	601	568	431	422	561	561	561	561	561	561	529
Total	8747	10196	10666	11464	9702	13442	13585	14069	12520	14643	14739	12158



## **2.6 – The non-specific subsidies attributable to the animal products and feed**

There has been a long debate, parallel to the agricultural trade negotiations at the WTO, on what type of subsidies can be considered non-trade distorting and put in the 'green box' defined in the Annex 2 of the AoA. The criticism begins with paragraph 1 which sets out the basic principle from which all the other paragraphs are derived: "*All policies for which exemption is claimed shall conform to the following basic criteria: (i) the support in question shall be provided through a publicly-funded government programme (including government revenue foregone) not involving transfers from consumers; and, (ii) the support in question shall not have the effect of providing price support to producers*". And the following 12 paragraphs present the conditions and criteria for specific green box measures.

First, it is clear that all green box subsidies imply transfers from consumers because, from a macro-economic point of view, the distinction between a market price support – financed by consumers – and a subsidy – financed by taxpayers – is not convincing since most taxes end up being paid by consumers. This is obvious in the EU where more than  $\frac{3}{4}$  of the Budget are eventually paid by consumers, given the weight of the value added tax (VAT) in fiscal revenues but also of excise duties – on oil products, tobacco and alcoholic drinks – and even of incomes taxes which are generally passed along to consumers.

According to the communication to the WTO of 2 June 2005 by the G-20 of the net agricultural exporting DCs, "*The programmes of provision of general services, public stockholding for food security and domestic food aid (Annex 2: Paragraphs 2-4) have been generally found to be non- or minimally trade-distorting*" but that "*ii) In contrast, the programmes of direct payments to producers (Annex 2: Paragraphs 5-13), specially the way they are currently designed, have been found to influence trade and production and therefore could not be characterised as having “no, or at most minimal, trade-distorting effects or effects on production”*"<sup>2</sup>. Such a distinction does not hold. These 'general services', although delivered in kind and collectively to farmers, have the powerful effect to increase agricultural production and reduce its costs. All these subsidies, granted for decades or even more than a century in the developed countries, explain largely the gap in yields and production costs between them and DCs. Daryll Ray, of the University of Tennessee, has well underlined their trade impact: "*WTO has declared that such research and education related expenditures have a minimal effect on trade... In practice, these activities have a direct impact on price and trade, whether that be a set-aside program or yield enhancing research*"<sup>3</sup>. He adds in another paper: "*Clearly, neither the US nor the rest of the world would be facing today's low prices and failing small farms if the cumulative growth in agricultural productivity had not taken place*"<sup>4</sup>. He enlarges his assessment in saying: "*Little attention has been paid to legacy investments in the infrastructure of agricultural areas. These legacy investments... all influence production decisions in one way or another and that influence continues year after year while the influence of direct payments are limited to a given year*"<sup>5</sup>. And IFPRI confirms the huge benefits that subsidies to agricultural research and extension could bring to India: "*IFPRI research shows that investments in R&D have the highest impact on agricultural growth per million rupees invested. The rates of return to public investment in research have been as high as over 60 percent, and in extension, over 50 percent.*

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<sup>2</sup> G-20, *Review and Clarification of Green Box Criteria*, G20/DS/Greenbox FINAL 02/06/05

<sup>3</sup> Daryll Ray, *Is food too important to be left to WTO?* Agricultural Analysis Policy Center, University of Tennessee, November 29, 2002 (<http://www.agpolicy.org>).

<sup>4</sup> Daryll Ray, Daniel de la Torre Ugarte, Kelly J. Tiller, *US Agricultural Policy: Changing course to secure farmers livelihoods worldwide*, Agricultural Policy Analysis Center, University of Tennessee, September 2003.

<sup>5</sup> Daryll Ray, *What is an agricultural subsidy?*, Agricultural Policy Analysis Center, University of Tennessee, 26 mars 2004.

*India currently invests only about 0.5 percent of its agricultural GDP in agricultural research, compared with 0.7 percent in the developing countries as a whole and as much as 2–3 percent in the developed countries"*<sup>6</sup>.

There is a lot to say about the alleged non-trade distorting nature of the subsidies of paragraphs 5 to 13 of Annex 2. There is no question that the EU alleged fully decoupled SPS notified in the green box has been created to compensate the reductions of agricultural prices since 1992, increasing the competitiveness of the EU products at the export and import levels. Clearly there are many reasons why the SPS is not in the AoA green box<sup>7</sup>. But the paragraphs 7 to 12 can also be challenged. Thus the "*Structural adjustment assistance provided through producer retirement programmes*" of paragraph 9 is a type of subsidies specific to rich countries, where farmers are paid to allow the remaining farmers to improve their competitiveness through a larger size, so as to sustain the competition with imported products and go on exporting with less explicit export subsidies. Paragraph 10 on "*Structural adjustment assistance provided through resource retirement programmes*" aims at almost the same objective that the preceding programme. The subsidies of paragraph 11 on "*Structural adjustment assistance provided through investment aids*" are justified by the EU as follows: "*Construction of processing, packaging and storage centres and equipment; land improvement (levelling, fencing, etc.); aid for farm modernization granted through subsidies or equivalent interest concessions; purchase of machinery and equipment, animals, buildings and plantations; aid for young farmers; restructuring and conversion of vineyards; soil improvement and reallocation of land; water management; diversification of rural activity and quality improvement schemes*". The subsidies of this type have generally been the highest in the traditional notified green box, between €5 to €6 billion per year. Their impact on the competitiveness of the EU products is unquestionable. Even the paragraph 12 "*Payments under environmental programmes*" are improving the EU competitiveness as they reduce pollutions and increase the production potential for the future. Finally paragraph 13 "*Payments under regional assistance programmes*" improve the competitiveness of the EU products relatively to the DCs' farmers who are suffering infinitely more from "*region's difficulties... of more than temporary circumstances*" than farmers in the EU disadvantaged regions.

Therefore we will take into account the share of the transversal non-specific subsidies which can be attributed to milk and feed in the same proportion as their share in the overall value of agricultural production from 2000 to 2010. Table 107 shows the EU transversal subsidies grouping the non-product specific AMS and the traditional green box subsidies notified at the WTO from 1999-2000 to 2007-08 (last notified year), and we will assume that these notifications will not change for 2008-09 and 2009-10. Clearly the EU has always under-notified greatly its non-product-specific AMS but we will limit ourselves to add the subsidies to agricultural fuel that the EU has notified to OECD and not to the WTO.

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<sup>6</sup> J. von Braun et al., *Indian agriculture and rural development*, IFPRI, 2005.

<sup>7</sup> Jacques Berthelot, *The CAP subsidies are incompatible with the WTO Agreement on agriculture*, in Collectif Stratégies Alimentaires et Plate-Forme Souveraineté Alimentaire, Can the CAP manage without market regulation after 2013?, Brussels, 31 March-1<sup>st</sup> April 2010, [http://www.solidarite.asso.fr/anglais/resources/jacques-berthelot-63/article/papers-2010?debut\\_documents\\_joints=10#pagination\\_documents\\_joints](http://www.solidarite.asso.fr/anglais/resources/jacques-berthelot-63/article/papers-2010?debut_documents_joints=10#pagination_documents_joints); *Solidarité's statement on the International aspects of the CAP*, EU Commission, March 12, 2012, <http://www.solidarite.asso.fr/IMG/pdf/Solidarite-statement-on-the-CAP-international-aspects.pdf>

**Table 107 – The EU non-product specific subsidies (NPSs) of the amber and green boxes**

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Notified NPS AMS	291	538	574	938	1052	1087	1059	1407	852	852	852	864
Tax rebate/agr. fuel	2381	2344	2505	2626	3081	3468	3618	3098	3140	3267	3398	2993
Traditional green box	21916	21848	20661	20404	22074	22734	23610	23578	28083	28083	28083	23734
Total NPSs of EU	24588	24730	23740	23968	26207	27289	28287	28083	32075	32202	32333	27591

Sources: EU notifications to the WTO up to 2007-08 and to OECD up to 2010 ([http://www.oecd.org/document/59/0,3746,en\\_2649\\_37401\\_39551355\\_1\\_1\\_1\\_37401,00.html](http://www.oecd.org/document/59/0,3746,en_2649_37401_39551355_1_1_1_37401,00.html)). EU Commission on State aids: [http://ec.europa.eu/competition/state\\_aid/studies\\_reports/expenditure.html#5](http://ec.europa.eu/competition/state_aid/studies_reports/expenditure.html#5)

The following tables show the share of milk (table 108), feed cereals (table 109), oilseeds meals and oils (table 110) and pulses (table 111) of EU origin in the EU whole agricultural production value from 2000 to 2010.

**Table 108 – The share of milk in the EU value of agricultural production (VAP)**

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
VAP	241703	249966	242579	243271	277927	270969	278554	326343	344270	302561	326230	282216
Milk	38392	41008	38978	38265	41797	42000	41251	48342	52724	41736	47538	42912
% of milk	15,88%	16,41%	16,07%	15,73%	15,04%	15,50%	14,81%	14,81%	15,31%	13,79%	14,57%	15,21%

**Table 109 – The share of feed cereals in the EU production value of all agricultural products**

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Total production value of agricultural products at producers' prices (VOP)												
	241703	249966	242579	243271	277927	270969	278554	326343	344270	302561	326230	282216
Cereals (without rice) production value and share in total agricultural production value (VOP)												
Value	24164	22909	22714	21697	30397	25079	28221	46380	48742	32446	42061	31346
% VOP	10.00%	9.16%	9.36%	8.92%	10.94%	9.26%	10.13%	14.21%	14.16%	10.72%	12.89%	11.11%
Production of cereals without rice, in 1000 tonnes												
	213820	199735	211639	187158	290017	259418	245229	258890	314168	294721	281074	250534
Production of feed cereals (in 1000 tonnes)												
	110122	117130	121076	125373	145400	156994	156621	169904	166358	162529	160102	144692
Percentage of feed cereals in the cereals production												
	51.50%	58.64%	57.21%	66.99%	50.14%	60.52%	63.87%	65.63%	52.95%	55.15%	56.96%	57.75%
Feed cereals production value												
	12444	13425	12995	14535	15241	15178	18025	30439	25809	17894	23958	18177
Percentage of feed cereals in the value of all agricultural products												
	5.15%	5.37%	5.36%	5.97%	5.48%	5.60%	6.47%	9.33%	7.50%	5.91%	7.34%	6.44%

\* COPs: cereals, oilseeds and pulses

**Table 110 – The share of oilseeds & oilseed meals & oils in the EU production value of all agricultural products**

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Total production value of agricultural products at producers' prices												
	241703	249966	242579	243271	277927	270969	278554	326343	344270	302561	326230	282222
Oilseeds production value												
All	2540	2915	2942	2955	4288	4142	4903	7398	9461	7565	9424	
Rapeseed	1631	1895	2029	2178	3098	3056	3725	5353	6789	5589	5970	
Sunflower	620	719	692	589	914	804	869	1666	2258	1569	1913	
Soybean	219	250	176	132	169	163	157	187	203	217	320	
Percentage of meal value in oilseed value (from table 85)												
Rapeseed	27.34%	25.58%	20.59%	20.69%	18.70%	16.44%	14.57%	18.01%	16.85%	19.37%	19.48%	19.35%
Sunflower	20.16%	17.72%	15.81%	16.06%	17.85%	15.15%	15.65%	17.15%	14.90%	18.47%	19.67%	16.86%
Soyabean	37.04%	36.15%	31.11%	26.23%	30.51%	29.75%	22.42%	25.58%	25.60%	32.73%	28.80%	29.60%
Oilseed meals production value												
Rapeseed	446	485	418	451	579	502	543	964	1144	1083	1163	
Sunflower	125	127	109	95	163	122	136	286	336	290	376	
Soyabean	81	90	55	35	52	48	35	48	52	71	92	
Sub-total	652	702	582	581	794	672	714	1298	1532	1444	1631	964
Percentage of oilseeds meals in the value of all agricultural products												
	0.27%	0.28%	0.24%	0.24%	0.29%	0.25%	0.26%	0.40%	0.45%	0.48%	0.50%	0.34%
Oilseed oils production value in compound feed												
Tot. value	1888	2213	2360	2374	3494	3470	4189	6100	7929	6121	7793	
% in feed	37.92%	35.55%	35.36%	37.10%	33.99%	36.29%	36.29%	36.29%	36.29%	36.29%	36.29%	
In feed	716	787	834	881	1188	1259	1520	2214	2877	2221	2828	1575
Percentage of oilseeds oil in compound feed in the value of all agricultural products												
	0.30%	0.31%	0.34%	0.36%	0.43%	0.46%	0.55%	0.68%	0.84%	0.73%	0.87%	0.56%

**Table 111 – The share of pulses in the EU production value of all agricultural products**

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Pulses production value												
EU	476	550	565	595	702	573	531	605	570	563	813	595
Percentage of pulses in the value of all agricultural products												
EU	0,20%	0,22%	0,23%	0,24%	0,25%	0,21%	0,19%	0,19%	0,17%	0,21%	0,25%	0,21%

Table 112 recapitulates the share of milk, feed cereals, oilseeds meals and oils, and pulses in the value of the whole EU agricultural production (VAP).

Table 112 – The share of milk, feed cereals, oilseeds meals and pulses in the agricultural production value

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Milk	15,88%	16,41%	16,07%	15,73%	15,04%	15,50%	14,81%	14,81%	15,31%	13,79%	14,57%	15,21%
Total EU feed for all animals												
Cereals	5,15%	5,37%	5,36%	5,97%	5,48%	5,60%	6,47%	9,33%	7,50%	5,91%	7,34%	6,44%
Oilseeds oils	0,30%	0,31%	0,34%	0,36%	0,43%	0,46%	0,55%	0,68%	0,84%	0,73%	0,87%	0,56%
Sub-total energy	5,45%	5,68%	5,70%	6,33%	5,91%	6,06%	7,02%	10,01%	8,34%	6,64%	8,21%	7,00%
Oilseed meals	0,27%	0,28%	0,24%	0,24%	0,29%	0,25%	0,26%	0,40%	0,45%	0,48%	0,50%	0,34%
Pulses	0,20%	0,22%	0,23%	0,24%	0,25%	0,21%	0,19%	0,19%	0,17%	0,21%	0,25%	0,21%
Sub-total protein	0,47%	0,50%	0,47%	0,48%	0,54%	0,46%	0,45%	0,59%	0,62%	0,69%	0,75%	0,55%
Milk and feed												
Total	21,80%	22,59%	22,24%	22,54%	21,49%	22,02%	22,28%	25,41%	24,27%	21,12%	23,53%	15,21%

As table 107 has shown the non-product specific subsidies of the amber box and traditional green box, we can deduct the amount of these subsidies attributable to energy feed and protein feed for all animals (table 113), and to milk (table 114), for which table 108 has shown the share of the milk value in the VAP.

Table 113 – The EU non-specific subsidies (NPS) attributable to feed of all animals

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
NPS subsidies	24588	24730	23740	23968	26207	27289	28287	28083	32075	32202	32333	27591
% of energy feed	5,45%	5,68%	5,70%	6,33%	5,91%	6,06%	7,02%	10,01%	8,34%	6,64%	8,21%	7,00%
NPS to "	1340	1405	1353	1517	1549	1654	1986	2811	2675	2138	2655	1917
% of protein feed	0,47%	0,50%	0,47%	0,48%	0,54%	0,46%	0,45%	0,59%	0,62%	0,69%	0,75%	0,55%
NPS to "	116	124	112	115	142	126	127	166	199	222	242	154
Total NPS to feed	1456	1528	1465	1632	1690	1779	2113	2976	2874	2360	2897	2070

Table 114 – The EU non-specific transversal subsidies attributable to cow milk

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
NPS subsidies	24588	24730	23740	23968	26207	27289	28287	28083	32075	32202	32333	27591
% of milk in VAP	15,88%	16,41%	16,07%	15,73%	15,04%	15,50%	14,81%	14,81%	15,31%	13,79%	14,57%	15,21%
NPS aids to milk	3905	4058	3810	3815	3942	4230	4189	4159	4911	4441	4711	4197

These non-specific transversal subsidies can be found in the EU notifications not only to the WTO but also to OECD. Although there is a large body of evidence of the huge under-notifications of these subsidies, particularly at the WTO, we will keep for conservative reasons these official data, which are mainly notified in the traditional WTO 'green box' – i.e. excluding the SPS and SAPS notified in the green box from 2005-06 to 2007-08, the last notified year – and, to a lesser extent, in the non-product-specific (NPS) "aggregate measurement of support" (AMS or "amber box"). But we add the tax rebates on agricultural fuel notified to OECD<sup>8</sup> but, oddly enough, not to the WTO. As the EU is overdue in its notifications to the WTO, we assume that the data for 2008-09 are the same as those of 2007-08 for the EU-15. In fact these non-product specific subsidies correspond, in the EU budget, to the sum of the subsidies on rural development and State aids plus some State aids not notified to the EU Commission such as the tax rebates on agricultural fuels since this type of 'operating aids' are not allowed, being harmful to the environment<sup>9</sup>.

As about half of the green box subsidies come from State aids in the EU-15, we assume that the EU-12 share of the EU-27 traditional green box from 2004 to 2008 is close to the gap between its total agricultural State aids – €3.018 billion on average – and the share of them (€1.187 billion) used for the "complementary national direct payments (CNDPs) or "top-ups" that these

<sup>8</sup> [http://www.oecd.org/document/59/0,3746,en\\_2649\\_37401\\_39551355\\_1\\_1\\_1\\_37401,00.html](http://www.oecd.org/document/59/0,3746,en_2649_37401_39551355_1_1_1_37401,00.html)

<sup>9</sup> European Commission, *Community guidelines for State aid in the agricultural sector (2000/C 28/02)*, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2000:028:0002:0024:EN:PDF>

Member States were allowed to give to their farmers whose decoupled "single area payment rights" (SAPRs) were much lower than the "single payment rights" (SPRs) in the EU-15.

## **2.7 – The distribution of EU feed between products and animals**

To assess the feed subsidies provided to dairy cows (or to milk), we have first to identify the share of animal feed consumed by dairy cows. The Tallage report prepared for DG Agriculture<sup>10</sup> gives, on average from 2003-04 to 2007-08, the distribution of concentrates between compound feed and the feed grown on farms or purchased by them for the three main animals – bovine cattle (including dairy cows), pigs and poultry & eggs – and per Member State, although we have converted into tonnes most data given only in percentages. The Tallage report aimed at constructing a model to simulate the feed needs of these animals, a model which has been elaborated differently for compound feed and on farm feed. The European Commission has assessed that *"the study provided a comprehensive overview of feed consumption in the EU and a model that can be very useful in assessing feed consumption and the feed stuffs market, in line with the criteria set out in the terms of reference"*<sup>11</sup>.

For compound feed the model – based on an extension of the French CEREOPA model and feed data base<sup>12</sup> – assumes that the feed industry tries to optimize each month the distribution of the ingredients entering the compound feed according to their relative prices, provided an appropriate nutritional balance is realized. On the other hand on farm feed has been derived from an estimate of the total feed needs of each category of animal (per kg of meat or litre of milk) based on their energy content, on farm feed consumption being the balance between this total need and the need covered by the compound feed data provided by FEFAC. The energy, measured in millions of calories, provided by on farm feed is then converted into tonnes of on farm feed given the feed energy content for each type of animal.

For bovine cattle a specific analysis is conducted for the marketing year 2007-08 to distinguish the three components of the energy needs of dairy and meat cattle: forage, compound feed and on farm concentrates. We will assume that this distribution is valid for the whole period 2004 to 2010 of the enlarging EU.

Table 115 shows the distribution of all concentrates between compound feed and on farm feed for bovine cattle (meat and dairy together), pig and poultry.

**Table 115 – Distribution of all concentrates between compound feed and on farm feed**

1000 tonnes	All concentrates			Compound feed			On farm feed			
	Total	Bovine	Pig	Poultry	Bovine	Pig	Poultry	Bovine	Pig	Poultry
UE27	284399	106880	105832	71687	44901	57939	56989	61979	47893	14698
UE25	272140	103205	101302	67633	44719	56455	55097	58486	44847	12536
UE15	235146	94250	84609	56287	42347	50808	47312	51903	33801	8975
UE12	49253	12630	21223	15400	2554	7131	9677	10076	14092	5723

Source: from Tallage report data of pages 61 and 62

Table 116 presents the distribution of energy sources, in million calories, for milk and meat cattle between forage, compound feed and on farm concentrates, and table 110 deducts the distribution of energy feed for milk and meat cattle between compound and on farm feeds.

<sup>10</sup> Tallage, *Modelling of feed consumption in the European Union*, November 2009, DG Agriculture, [http://ec.europa.eu/agriculture/analysis/external/feed/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/external/feed/index_en.htm)

<sup>11</sup> European Commission, *Study on Modelling of feed consumption in the European Union - Quality grid*, Brussels, 16 February 2009, [http://ec.europa.eu/agriculture/analysis/external/feed/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/external/feed/index_en.htm)

<sup>12</sup> <http://www.feedbase.com/economic.php?Lang=E>

Table 116 – Sources of energy feed for milk and meat cattle: compound, on farm and forage

M calories	Energy needs		Forage		Compound feed		On farm feed	
	Milk	Meat	Milk	Meat	Milk	Meat	Milk	Meat
UE27	189333	436321	115418	333850	44255	24575	29351	77890
UE25	179571	425512	109560	326824	44060	24467	25739	74215
UE15	154411	387682	91261	299365	40718	23851	22057	64450
UE12	34922	48639	24157	34485	3537	724	7294	13440

Source: Tallage report, data from Figure 36, page 61.

Table 117 – Distribution in % of energy feed for milk and meat cattle between compound and on farm

% of calories	Compound feed			On farm feed		
	Milk	Meat	Total	Milk	Meat	Total
UE27	64.30	35.70	100%	27.37	72.63	100%
UE25	64.30	35.70	100%	25.75	74.25	100%
UE15	63.06	56.94	100%	25.50	74.50	100%
UE12	83.01	16.99	100%	35.18	64.84	100%

The table 118 translates into tonnes the concentrates of all origins for milk and meat cattle.

Table 118 – Distribution of bovine concentrates between bovine meat and milk cattle

1000 tonnes	Meat and milk cattle			Milk cattle			Meat cattle		
	Concentrate	Compound	On farm	Concentrate	Compound	On farm	Concentrate	Compound	On farm
UE27	106880	44901	61979	45835	28871	16964	61045	16030	45015
UE25	103205	44719	58486	43814	28754	15060	68889	15965	43426
UE15	94250	42347	51903	40348	27305	13043	53902	15042	38860
UE12	12630	2554	10076	5665	1566	3545	6965	988	6531

Source: Tallage report, data from Figure 36, page 61.

Table 119 – Average distribution (and %) of the EU compound feed of all origins per animal: 2003/04-2007/08

1000 tonnes	Milk cattle	Bovine meat	Pig meat	Poultry & eggs	Total
	Compound feed				
UE27	28871 (18,06%)	16030 (10,03%)	57939 (36,25%)	56989 (35,66%)	159829 (100%)
UE25	28754 (18,40%)	15965 (10,22%)	56455 (36,13%)	55097 (35,26%)	156271 (100%)
UE15	27305 (19,37%)	15042 (10,71%)	50808 (36,17%)	47312 (33,68%)	140467 (100%)
UE12	2120 (10,64%)	988 (4,96%)	7131 (35,81%)	9677 (48,59%)	19916 (100%)
On farm feed					
UE27	16964 (13,62%)	45015 (46,14%)	47893 (38,45%)	14698 (11,80%)	124570 (100%)
UE25	15060 (13,00%)	43426 (37,48%)	44847 (38,70%)	12536 (10,82%)	115869 (100%)
UE15	13043 (13,78%)	38860 (41,04%)	33801 (35,70%)	8975 (9,48%)	94679 (100%)
UE12	3545 (11,86%)	6531 (21,85%)	14092 (47,14%)	5723 (19,15%)	29891 (100%)

And from tables 115 and 118 we can deduct in table 119 (above) the shares of compound feed and on farm feed of all origins consumed by each category of animal.

If the distribution of concentrates presented here is based on the average data for 2003-04 to 2007-08 we would like to have data for the whole years from 2000 to 2010. We have then the following alternatives: either we admit that the data on concentrates consumption are only available for the average of 2003-04 to 2007-08 or, as we have reliable data for the subsidies from 2000 to 2010, we can estimate the feed data for each year. For this we assume that the consumption of concentrates has followed the same evolution as the level of production of the animal products, given in carcass-weight equivalent for meats and shell weight for eggs, as shown in table 113. Assuming that the data are representative for the middle year 2005-06, assimilated to the civil year 2006, we can deduct the series of indexes of production with base 100 in 2006.

Table 120 – EU production volume & indexes of cow milk, beef, pork, poultry & eggs: 2000 to 2010

1000 tons	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Milk	123106	122124	121968	122269	141666	142786	141204	147990	148459	146190	147300	136824
Indexes	87.18	86.49	86.38	86.59	100.33	101.12	100	104.81	105.14	103.53	99.53	96.46
Beef	7416	7265	7466	7361	8033	7846	7914	8204	8072	7717	7918	
Indexes	93.70	91.80	94.34	93.01	101.50	99.14	100	103.66	102.00	97.51	100	
Pork	17587	17533	17730	17787	21080	21105	21405	22252	22071	21019	21739	
Indexes	82.16	81.91	82.83	83.10	98.48	98.60	100	103.96	103.11	98.20	101.56	
Poul&eggs	14509	14721	15066	14524	18066	17987	17666	18799	19053	18981	19438	
Indexes	82.13	83.33	85.28	82.21	102.26	101.82	100	106.41	107.85	107.44	110.03	

Source: Eurostat

Table 121 – Distribution of compound and on-farm feed to dairy cows from 2000 to 2010

1000 t	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
EU27	150716	149816	149942	150184	148064	149081	148515	147990	148459	146190	147300	148751
"index							100	99.65	99.96	98.43	99.18	
"CF							28871	28770	28859	28418	28634	
"FF							16964	16905	16957	16698	16825	
EU25	145004	144170	143999	144023	141666	142786	141204	141190	141848	139908	141764	142506
"index					100.33	101.12	100					
"CF					28849	29076	28754					
"FF					15110	15229	15060					
EU15	123106	122124	121968	122269	120070	120835	119282	119132	119388	117837	120143	120560
"index	103.21	102.38	102.25	102.50			100					
"CF	28181	27955	27919	27988			27305					
"FF	13462	13353	13336	13369			13043					
EU	123106	122124	121968	122269	141666	142786	141204	147990	148459	146190	147300	136824
"CF	28181	27955	27919	27988	28849	29076	28754	28770	28859	28418	28634	28491
"FF	13462	13353	13336	13369	15110	15229	15060	16905	16957	16698	16825	15119

Source: Eurostat

Then, based on tables 120 and 121, tables 122 to 124 present the distribution of compound feed and on farm feed for each animal product for each year from 2000 to 2010 for the EU15 from 2000 to 2003, EU25 from 2004 to 2006, EU27 from 2007 to 2010, and hence for the legal EU from 2000 to 2010.

Table 122 – Distribution of compound and on-farm feed to bovine meat from 2000 to 2010

1000 t	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
EU27							7914	8204	8072	7717	7918	
"index							100	103.66	102.00	97.51	100.05	
"CF							16030	16617	16351	15631	16038	
"FF							45015	46663	45915	43894	45038	
EU25					8033	7846	7914					
"index					101.50	99.14	100					
"CF					16204	15828	15965					
"FF					44077	43053	43426					
EU15	7416	7265	7466	7361			7299					
"index	101.60	99.53	102.29	100.85			100					
"CF	15283	14971	15386	15170			15042					
"FF	39482	38677	39750	39190			38860					
EU	7416	7265	7466	7361	8033	7846	7914	8204	8072	7717	7918	
"CF	15283	14971	15386	15170	16204	15828	15965	16617	16351	15631	16038	
"FF	39482	38677	39750	39190	44077	43053	43426	46663	45915	43894	45038	

Source: Eurostat

Table 123 – Distribution of compound and on-farm feed to pig meat from 2000 to 2010

1000 t	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
EU27							21948	22252	22071	21019	21739	
"index							100	101.39	100.56	95.77	99.05	
"CF							57939	58744	58263	55488	57389	
"FF							47893	48559	48161	45867	47438	
EU25					21080	21105	21405					
"index					98.48	98.60	100					
"CF					55598	55664	56455					
"FF					44165	44219	44847					
EU15	17587	17533	17730	17787			18091					
"index	97.21	96.92	98.00	98.32			100					
"CF	49390	49243	49792	49954			50808					
"FF	32858	32760	33125	33233			33801					
EU	17587	17533	17730	17787	21080	21105	21405	22252	22071	21019	21739	
"CF	49390	49243	49792	49954	55598	55664	56455	58744	58263	55488	57389	
"FF	32858	32760	33125	33233	44165	44219	44847	48559	48161	45867	47438	

Table 124 – Distribution of compound and on-farm feed to poultry meat & eggs from 2000 to 2010

1000 t	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
EU27							17269	18799	19053	18981	19438	
"index							100	108.86	110.33	109.91	112.56	
"CF							56989	62038	62876	62637	64147	
"FF							14698	16000	16216	16155	16544	
EU25					18066	17987	17666					
"index					102.26	101.82	100					
"CF					56342	56100	55097					
"FF					12819	12764	12536					
EU15	14509	14838	15067	14525			14145					
"index	102.57	104.90	106.52	102.69			100					
"CF	48528	49630	50397	48585			47312					
"FF	9206	9415	9560	9216			8975					
EU												
"CF	48528	49630	50397	48585	56342	56100	55097	62038	62876	62637	64147	
"FF	9206	9415	9560	9216	12819	12764	12536	16000	16216	16155	16544	

From tables 122 to 124, tables 125 and 126 present the level and share (in %) of compound feed and on farm feed consumed by each animal product from 2000 to 2010.

Table 125 – Level and share of each animal product in compound feed from 2000 to 2010

1000 t	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Amount of compound feed per type of animal product												
Milk	28181	27955	27919	27988	28849	29076	28754	28770	28859	28418	28634	28491
Bov. meat	15283	14971	15386	15170	16204	15828	15965	16617	16351	15631	16038	15768
Pig meat	49390	49243	49792	49954	55598	55664	56455	58744	58263	55488	57389	54180
Poul&eggs	48528	49630	50397	48585	56342	56100	55097	62038	62876	62637	64147	56034
Total	141382	141799	143494	141697	156993	156668	156271	166169	166349	162174	166208	154473
Share (%) of total compound feed per type of animal product												
Milk	19.93	19.71	19.46	19.75	18.38	18.56	18.40	17.31	17.35	17.52	17.23	18.44
Bov. meat	10.81	10.56	10.72	10.71	10.32	10.10	10.22	10.00	9.83	9.34	9.65	10.21
Pig meat	34.93	34.73	34.70	35.25	35.41	35.53	36.13	35.35	35.02	34.22	34.53	35.07
Poul&eggs	34.32	35.00	35.12	34.29	35.89	35.81	35.26	37.33	37.80	38.62	38.59	36.27
Total	100	100	100	100	100	100	100	100	100	100	100	100

Table 126 – Level and share of each animal product in on farm feed from 2000 to 2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Amount of on farm feed per animal product												
Milk	13462	13353	13336	13369	15110	15229	15060	16905	16957	16698	16825	15119
Bov. meat	39482	38677	39750	39190	44077	43053	43426	46663	45915	43894	45038	42651
Pig meat	32858	32760	33125	33233	44165	44219	44847	48559	48161	45867	47438	41385
Poul&eggs	9206	9415	9560	9216	12819	12764	12536	16000	16216	16155	16544	12766
Total	95008	94205	95771	95008	116171	115265	115869	128127	127249	122614	125845	111921
Share (%) of on farm feed per animal product												
Milk	14.17	14.17	13.92	14.07	13.01	13.21	13.00	13.19	13.33	13.62	13.37	13.51
Bov. meat	41.56	41.06	41.51	41.25	37.94	37.35	37.48	36.71	36.08	35.80	35.79	38.32
Pig meat	34.58	34.78	34.59	34.98	38.02	38.36	38.70	37.90	37.85	37.41	37.70	36.98
Poul&eggs	9.69	9.99	9.98	9.70	11.03	11.07	10.82	12.49	12.74	13.18	13.15	11.41
Total	100	100	100	100	100	100	100	100	100	100	100	100

We have now to identify the feed ingredients of EU origin and their distribution in compound feed and on farm feed. The FEFAC report provides the distribution of ingredients and their origin for the EU compound feed for all animals (EU 15 from 2000 to 2003, EU25 from 2004 to 2006 and EU27 from 2007 to 2010). We have grouped them together between energy feed and protein feed. However we have deleted the minerals and vitamins which are not receiving any subsidy. The table 127 shows the net ingredients from EU origin after subtracting the imported ingredients. The energy ingredients have represented on average 76.14% of the compound feed from 2000 to 2010, among which 69.35% for cereals and co-products, without large variations of those percentages among years.



Table 127 – Composition of the ingredients of EU origin in the EU compound feed

1000 tons	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Total ingredients in the EU compound feed, from EU origin and imported												
	124346	126190	127182	126150	144315	141936	142117	151194	153601	147825	151031	139626
Energy feed ingredients of EU origin												
Cereals	49691	49334	43311	44581	60333	60529	61394	58272	62259	66980	64884	56506
Co-products*	6794	7995	7010	8715	10527	11685	12244	12326	12417	13683	13611	10637
Tapioca	-291	124	56	72	-12	248	217	-547	-283	735	734	96
Oils&fats	2151	1936	1932	1998	2202	2009	2074	2273	2284	2187	2687	2158
Others***	4750	4375	4306	3506	3954	4347	4675	4731	4402	4040	4070	4320
Sub-total	63095	63764	56615	58872	77004	78818	80604	77055	81079	87625	85986	73717
Protein feed ingredients of EU origin												
Oilcakes and meals	10818	11218	11513	12677	12552	11424	11118	13586	16229	14634	15715	12862
Pulses	2283	2212	1191	1435	1347	1028	981	1815	1644	1553	1689	1562
Dried forage	2046	2249	2521	2449	2344	2817	2046	2305	2348	1995	2306	2311
Dairy feed	1433	1316	1317	1290	1296	1307	1123	1137	1206	1149	1156	1248
Animal meals**	1129	-286	-222	-178	-1	-84	-38	4	88	9	124	50
Others***	1188	1094	1076	1326	989	1087	1169	1183	1101	1010	1018	1080
Sub-total	18897	17803	17396	18999	18527	17579	16399	20030	22616	20350	22008	19113
Total feed ingredients of EU origin without minerals and vitamins												
	81992	81567	74011	77871	95531	96397	97003	97085	103695	107975	107994	92830
% of energy feed	76.95	78.17	76.50	75.60	80.61	81.76	83.09	79.37	78.19	81.15	79.62	79.41
% of protein feed	23.05	21.83	23.50	24.40	19.39	18.24	16.91	20.63	21.81	18.85	20.38	20.59

Source: FEAC; \* co-products of agro-industries, to which we have assimilated the following imported ingredients: corn gluten feed, maize germ meal, DDGS, molasses, beet pulp, citrus pulp; \*\* gap between the EU animal flours and imported fish meals; \*\*\* as the EU has a deficit in protein feed, we have allocated 80% of the gap between "All others" EU feed and imported "miscellaneous" to the energy feed and 20% to protein feed.

The percentage of ingredients of EU origin in the compound feed has been on average, from 2000 to 2010, of 87% for cereals, 60.7% for co-products of agro-industries, 33.9% for oilseeds meals, 69% for pulses, 100% for dried fodder and dairy feed for veal calves.

Table 128 assumes that the relative distribution between energy feed and protein feed in the compound feed is the same for dairy cows as for the average for all animal products given in table 127 and table 129 shows the level and share of each animal product in compound feed.

Table 128 – Distribution of dairy cows feed between energy and protein in compound feed, 2000-2010

1000 t	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Total	28181	27955	27919	27988	28849	29076	28754	28770	28859	28418	28634	28491
Energy	21685	21852	21358	21159	23255	23773	23892	22835	22565	23061	22798	22625
Protein	6496	6103	6561	6829	5594	5303	4862	5935	6294	5357	5836	5866

Table 129 – Level and share of each animal product in compound feed from 2000 to 2010

1000 t	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Amount of compound feed per type of animal product												
Milk	28181	27955	27919	27988	28849	29076	28754	28770	28859	28418	28634	28491
Bov. meat	15283	14971	15386	15170	16204	15828	15965	16617	16351	15631	16038	15768
Pig meat	49390	49243	49792	49954	55598	55664	56455	58744	58263	55488	57389	54180
Poul&eggs	48528	49630	50397	48585	56342	56100	55097	62038	62876	62637	64147	56034
Total	141382	141799	143494	141697	156993	156668	156271	166169	166349	162174	166208	154473
Share (%) of total compound feed per type of animal product												
Milk	19.93	19.71	19.46	19.75	18.38	18.56	18.40	17.31	17.35	17.52	17.23	18.44
Bov. meat	10.81	10.56	10.72	10.71	10.32	10.10	10.22	10.00	9.83	9.34	9.65	10.21
Pig meat	34.93	34.73	34.70	35.25	35.41	35.53	36.13	35.35	35.02	34.22	34.53	35.07
Poul&eggs	34.32	35.00	35.12	34.29	35.89	35.81	35.26	37.33	37.80	38.62	38.59	36.27
Total	100	100	100	100	100	100	100	100	100	100	100	100

For on farm feed we follow Tallage's view that all the energy feed from all origins in on farm feed comes from cereals and protein feed comes from oil cakes, table 130 showing the data for EU27, calculated from 2005-06 to 2007-08.

Table 130 – Distribution of on farm feed among products of all origins from 2006 to 2008

Million tonnes	2006	2007	2008	Average
Cereals	88.1	89.5	88.7	88.8
Protein feed	12.1	11.2	10.5	11.3
Total	100.2	100.7	99.2	100.1

Table 131 stems from table 130, assuming that all cereals in on farm feed are from EU origin – which is not a bold assumption given that 95.8% of those in compound feed were from EU origin on average from 2000 to 2008 even if that rate has risen exceptionally to 13.9% from 2006 to 2008, the EU having eliminated its tariffs in 2008 with net imports of 15 Mt of feed cereals in the 2007-08 marketing year because of the explosion in the prices of cereals and oilcakes – and that only soybean meals bought by farmers constitute the imported protein feed. We could have taken this exceptional rate into account but this would not be the best solution if we want to have a structural picture of the EU feed sector. Besides most of the imported cereals have been used in the compound feed and not in on farm feed.

Table 131 – Distribution of on farm feed among products of EU origin: 2006-2008

Million tonnes	2006	2007	2008	Average
Energy (cereals)	88.1 (96.39%)	89.5 (96.65%)	88.7 (96.28%)	88.8 (96.42%)
Protein feed	3.3 (3.61%)	3.1 (3.35%)	3.5 (3.72%)	3.3 (3.58%)
Total	91.4 (100%)	92.6 (100%)	92.2 (100%)	92.1 (100%)

Although the data in table 131 are only for 2006 to 2008, we assume that the relative percentages of cereals and protein feed have been the same from 2000 to 2010, which is not a bold assumption since they have already remained almost the same from 2006 to 2008. Besides we assume that the share of each animal product in on farm feed of all origins given in table 130 is the same for the on farm feed of EU origin. Tables 132 and 133 distribute the on farm feed of EU origin between energy feed and protein feed for all animals and dairy cows.

Table 132 – Distribution of on farm feed, EU origin, for all animals between energy&protein, 2000-10

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Total feed	95008	94205	95771	95008	116171	115265	115869	128127	127249	122614	125845	111921
Energy	91607	90832	92342	91607	112012	111139	111689	123835	122515	118224	121340	107914
Protein	3401	3373	3429	3401	4159	4126	4180	4292	4734	4390	4505	3999

Table 133 – Distribution of EU on farm feed for dairy cows between energy and protein, 2000-10

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Total feed	13462	13353	13336	13369	15110	15229	15060	16905	16957	16698	16825	15119
Energy	12980	12875	12859	12890	14569	14683	14516	16339	16326	16100	16223	14578
Protein	482	478	477	479	541	546	544	566	631	598	602	540

Finally table 134 adds tables 128 and 132 to show the total energy and protein feed of EU origin in compound feed and on farm feed for dairy cows from 2000 to 2010 and table 135 presents the level and share of energy and protein feed for all animal products and deducts the share (in %) of total energy and protein feeds for dairy cows.

Table 134 – Distribution of feed of EU origin for dairy cows between energy & protein, 2000-10

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Energy feed												
Compound	21685	21852	21358	21159	23255	23773	23892	22835	22565	23061	22798	22625
On farm	12980	12875	12859	12890	14569	14683	14521	16300	16350	16100	16223	14578
Sub-total	34665	34727	34217	34049	37824	38456	38413	39135	38915	39161	39021	37203
Protein feed												
Compound	6496	6103	6561	6829	5594	5303	4862	5935	6294	5357	5836	5866
On farm	482	478	477	479	541	546	539	605	607	598	602	541
Sub-total	6978	6581	7038	7308	6135	5849	5401	6540	6901	5955	6438	6407
Total energy and protein feed												
Total	41643	41308	41255	41357	43959	44305	43814	45675	45816	45116	45459	43610

Table 135 – Level and share of energy and protein feed for all animal products and dairy cows, 2000-10

1000 t	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Energy feed and protein feed in compound feed for all animal products												
Total	141382	141799	143494	141697	156993	156668	156271	166169	166349	162174	166208	154473
energy	108793	110844	109773	107123	126552	128092	129846	131888	130068	131577	132335	122445
protein	32589	30955	33721	34574	30441	28576	26425	34281	36281	30597	33873	32028
Energy feed and protein feed in on farm feed for all animal products												
Total	95008	94205	95771	95008	116171	115265	115869	128127	127249	122614	125845	111921
energy	91607	90832	92342	91607	112012	111139	111689	123835	122515	118224	121340	107914
protein	3401	3373	3429	3401	4159	4126	4180	4292	4734	4390	4505	3999
Energy and protein feed for all animal products												
Total	236390	236004	239265	236705	273164	271933	272140	294296	293598	284788	292053	266386
energy	200400	201676	202115	198730	238564	239231	241535	255723	252583	249801	253675	230359
protein	35990	34328	37150	37975	34600	32702	30605	38573	41015	34987	38378	36027
Energy and protein feed for dairy cows												
Total	41643	41308	41255	41357	43959	44305	43814	45675	45816	45116	45459	43610
energy	34665	34727	34217	34049	37824	38456	38413	39135	38915	39161	39021	37203
protein	6978	6581	7038	7308	6135	5849	5401	6540	6901	5955	6438	6407
Share (in %) of total energy and protein feeds going to dairy cows												
Total	17.62	17.50	17.24	17.47	16.09	16.29	16.10	15.52	15.61	15.84	15.57	16.37
energy	17.30	17.22	16.93	17.13	15.85	16.07	15.90	15.30	15.41	15.68	15.38	16.15
protein	19.39	19.17	18.94	19.24	17.73	17.89	17.65	16.95	16.83	17.02	16.78	17.78

## 2.8 – Recapitulation of total subsidies to the EU dairy products from 2000 to 2010

Table 136 changes table 106, putting vegetable oil with energy feed, and shows the total payments to the EU feed for all animals and table 137 deducts the specific and non-product-specific (NPS) subsidies to dairy cows feed given its share of compound feed and on-farm feed for all animals.

Table 136 – EU total payments to feed from 2000 to 2010

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
EU15 energy	6437	7803	8094	9135	7324	9333	9350	9189	8117	9373	9613	8524
EU12 energy						1629	2095	2782	2335	2678	3070	1326
Vegetable oil	431	601	568	431	422	561	561	561	561	561	561	529
EU energy feed	6868	8404	8662	9566	7746	11523	12006	12532	11013	12612	13244	10379
EU15 protein	1879	1792	2004	1898	1956	1870	1541	1456	1432	1943	1390	1742
EU12 protein						29	38	81	75	88	105	37
EU protein feed	1879	1792	2004	1898	1956	1919	1579	1537	1507	2031	1495	1779
Total	8747	10196	10666	11464	9702	13442	13585	14069	12520	14643	14739	12158

Table 113 – The EU non-specific subsidies (NPS) attributable to feed of all animals

€ million	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
NPS subsidies	24588	24730	23740	23968	26207	27289	28287	28083	32075	32202	32333	27591
% of energy feed	5.45%	5.68%	5.70%	6.33%	5.91%	6.06%	7.02%	10.01%	8.34%	6.64%	8.21%	7.00%
NPS to "	1340	1405	1353	1517	1549	1654	1986	2811	2675	2138	2655	1917
% of protein feed	0.47%	0.50%	0.47%	0.48%	0.54%	0.46%	0.45%	0.59%	0.62%	0.69%	0.75%	0.55%
NPS to "	116	124	112	115	142	126	127	166	199	222	242	154
Total NPS to feed	1456	1528	1465	1632	1690	1779	2113	2976	2874	2360	2897	2070

Table 137 – The specific and non-product-specific (NPS) subsidies to dairy cows feed, 2000 to 2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Subsidies to energy feed for dairy cows												
Feed subs.	6868	8404	8662	9566	7746	11523	12006	12532	11013	12612	13244	10379
% D cows	17.30	17.22	16.93	17.13	15.85	16.07	15.90	15.30	15.41	15.68	15.38	16.15
Sub. "	1188	1447	1466	1639	1228	1852	1909	1917	1697	1978	2037	1676
NPS/feed	1340	1405	1353	1517	1549	1654	1986	2811	2675	2138	2655	1917
" D. cows	232	242	229	260	246	266	316	430	412	335	408	310
Subsidies to protein feed for dairy cows												
Feed subs.	1879	1792	2004	1898	1956	1919	1579	1537	1507	2031	1495	1779
% D cows	19.39	19.17	18.94	19.24	17.73	17.89	17.65	16.95	16.83	17.02	16.78	17.78
Sub. "	364	344	380	365	347	343	279	261	254	346	251	316
NPS/feed	116	123	112	115	141	125	127	165	199	222	242	154
" D. cows	22	24	21	22	25	22	22	28	33	38	41	27
Total specific and NPS subsidies to dairy cows feed												
Spec. feed	1552	1791	1846	2004	1575	2195	2188	2178	1951	2324	2288	1992
NPS/feed	254	266	250	282	271	288	338	458	445	373	449	337
Total	1806	2057	2096	2286	1846	2483	2526	2636	2396	2697	2737	2329

Table 138 recapitulates all specific and NPS subsidies to milk, from tables 73 (market interventions), 86 (direct aids to milk), 114 (NPS subsidies to milk) and 137 (NPS subsidies to dairy cows feed). We see that total subsidies to milk have reached on average €10.042 billion from 2000 to 2010 – of which €5.508 billion (54.8%) of specific subsidies and €4.534 billion of NPS subsidies (45.2%) – and €12.733 billion in 2010, of which €7.405 billion of specific subsidies (58.2%) and €5.160 billion of NPS subsidies (41.8%).

Table 138 – The specific and non-product-specific (NPS) subsidies to milk, 2000 to 2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Total and domestic (total – refunds) specific subsidies to milk												
Interventions	2934	2186	2612	3039	2274	1384	1223	553	154	399	541	1572
" refunds	1953	1297	1339	1799	1699	1284	939	428	35	203	198	1016
Direct aids						1410	1524	4427	4401	4367	4287	1856
Aids to feed	1552	1791	1846	2004	1575	2195	2188	2178	1951	2324	2288	1992
Sub-total	4486	3977	4458	5043	3849	4989	4935	7158	6506	7090	7116	5420
" – refunds	2533	2680	3119	3244	2150	3705	3996	6730	6471	6887	6918	4404
Non-product-specific subsidies to milk												
To milk	3905	4058	3810	3815	3942	4230	4189	4159	4911	4441	4711	4197
To feed	254	266	250	282	271	288	338	458	445	373	449	337
Sub-total	4159	4324	4060	4097	4213	4518	4527	4617	5356	4814	5160	4534
Total and domestic only (total – refunds) specific and NPS subsidies to milk												
Total	8645	8301	8518	9140	8062	9507	9462	11775	11862	11904	12276	9954
- refunds	6692	7004	7179	7341	6363	8223	8523	11347	11827	11701	12078	8938

Finally table 139 shows the dumping of EU dairy products from 2000 to 2010.

Table 139 – Subsidies to the EU dairy products produced and exported, in milk equivalent (m.e.)

Million tonnes and M€	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Production : Mt of m.e.	121,2	121,4	122,2	122,6	142,3	143,0	141,7	148,2	149,4	149,5	151,2	137,5
Exports: Mt of m.e.	15,3	12,4	12,7	13,5	14,5	14,1	12,4	12,2	12,2	12,6	14,4	13,3
Milk production value	38399	41020	38990	38283	41816	42002	41259	48384	52631	41592	47076	42859
Dairy exports value	5294	5298	4877	4869	5422	5552	5355	6691	7035	5733	7774	5825
" /production value	13.79	12.92	12.51	12.72	12.97	13.22	12.98	13.83	13.37	13.78	16.51	13.59
Domestic specific subsid.	2533	2680	3119	3244	2150	3705	3996	6730	6471	6887	6918	4404
Domestic aids to exports	349	346	390	413	279	490	519	931	865	949	1142	599
Export refunds*	1953	1297	1339	1799	1699	1284	939	428	35	203	198	1016
Total spec. aids to exports	2302	1643	1729	2212	1978	1774	1458	1359	900	1152	1340	1615
" per tonne of m.e. (€)	150.5	132.5	136.1	163.9	136.4	125.8	117.6	111.4	73.8	91.4	93.1	121.4
NPS aids to exports	574	559	508	521	546	597	588	639	716	663	852	616
" per tonne of m.e. (€)	37.5	45.1	40.0	38.6	37.7	42.3	47.4	52.4	58.7	52.6	59.2	46.3
Total aids to exports	2876	2202	2237	2733	2524	2371	2046	1998	1616	1815	2192	2231
" per tonne of m.e. (€)	188.0	177.6	176.1	202.5	174.1	168.1	165.0	163.8	132.5	144.0	152.3	167.7
Dumping rate (sp.aids)	43.5%	31%	35.5%	45.4%	32.0%	31.8%	27.2%	20.3%	12.8%	20.1%	17.2%	27.7%
Total dumping rate	54.3%	41.6%	45.9%	56.1%	46.6%	42.7%	38.2%	29.9%	23.0%	31.7%	28.2%	38.3%

\* Although the legal EU refers to the EU15 from 2000 to 2003, the EU15 had ceased to use export refunds on its exports to the EU12 since 2000.

We see that, on average from 2000 to 2010, total subsidies to the exported dairy products were of €167.7 per tonne of milk equivalent, of which €121.4 for specific subsidies and €46.3 for non-product-specific subsidies. The dumping rate – measured as the ratio of subsidies to the value of the exported dairy products – was on average of 27.7% if we consider only the specific subsidies and of 38.3% if we take into account the non-product-specific subsidies attributable to milk. In 2010 total subsidies to exports were of €152.3 per tonne of milk-equivalent, of which €93.1 for specific subsidies and €59.2 for NPS subsidies.

The feed subsidies represented in 2010 €15.1 per tonne of milk equivalent if we take only into account the specific subsidy and €18.1 per tonne of milk equivalent if we take into account the non-product specific subsidies, so that €17 per tonne would be a fair compromise.

It is clear that this long analysis of the dumping rate of the EU dairy products would not have been worthwhile if the only objective was to assess the cost to the Indian dairy sector of the EU dumping given the negligible level of EU exports to India: 8,293 tonnes (table 44) for €13.3 billion on average from 2000 to 2010 (table 43) or even 15,648 tonnes for €26 million in 2010. These exports corresponded to an average EU FOB price of €1,608 per tonne of dairy products from 2000 to 2010 and of €1,664 per tonne in 2010. The main export item, lactose, represented an average of 4,654 tonnes for €5,700 million from 2000 to 2010 with an average FOB price of €1,231 per tonne and, in 2010, 10,071 tonnes for €13,698 million, with a FOB price of €1,360.

It is difficult to find the corresponding milk equivalent of these exports given their heterogeneity but, given the prevailing share of lactose, which corresponds to 4.8% of milk weight, if we multiply the actual weight of dairy exports by 3 to get the milk-weight equivalent, the average EU dairy exports to India would have been of 24,879 tonnes of milk-equivalent from 2000 to 2010 of which 46,944 tonnes in 2010. The average total subsidy of €167.7 per tonne of milk-weight equivalent from 2000 to 2010 corresponded to €4.172 million for the EU dairy exports to India, with a dumping rate of 31.2%, of which €7.873 million for 2010 with a dumping rate of 30.1%. Even if we consider only the product-specific subsidies, their amount was of €3.020 million on average from 2000 to 2010, with a dumping rate of 22.6%, and of €5.741 million in 2010 with a dumping rate of 16.6%.

Therefore the real interest of this identification of the EU dairy dumping is to alert the Indian Authorities negotiating a bilateral trade agreement with the EU to be aware of the potential economic and social threat of opening its domestic market to the EU exports for its 75 million dairy farmers and all the upstream and downstream activities in the dairy chain.