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COMMITTEE ON COMMODITY PROBLEMS

INTERGOVERNMENTAL GROUP ON MEAT AND DAIRY PRODUCTS

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TABLES AND GRAPHICS

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I. SUPPLEMENTARY FIGURES SUPPORTING DOCUMENT

CCP: ME 06/2 “IMPACTS OF ANIMAL DISEASE OUTBREAKS ON LIVESTOCK MARKETS”

A. ADDITIONAL FIGURES AND ANALYSES

1) Impact of a 10% consumption shift away from poultry to other meats

Avian influenza has caused consumers to change their meat consumption patterns. To make an assessment of how a global consumption shock may affect meat and feed grain markets, this scenario examined the impacts of a 10% negative shift in all country and region consumer demand functions for poultry, with offsetting shifts also made to beef, pigmeat and sheepmeat demands in order to retain the total meat consumption quantity. (based on quantities of last three years). The shock was effected for 2006, and the scenario was continued over the base projection period to assess dynamic impacts. The net impact is to lower poultry prices, but since poultry production responds quickly to price signals the net price effect of 2006 is muted, and dynamic price and production effects dissipate. However, biological cycles for other meats limit production response causing higher prices initially in the context of assumed higher demand. Overall, the poultry sector regains equilibrium quickly, while for the other meats whose production cycles are longer, and with that for beef at almost 8 years, and pork at about four years, the impacts continue over time. The feed grain sectors are affected immediately by the decline in poultry production, but regain as other meats production increases.

Figure S.1: World meat price impacts of 10% worldwide consumption shift away from poultry in 2006

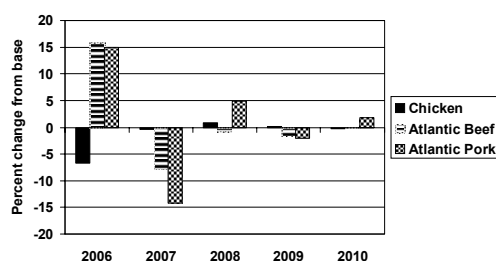


Figure S.2: World chicken price impacts of 10% worldwide consumption shift away from all poultry in 2006

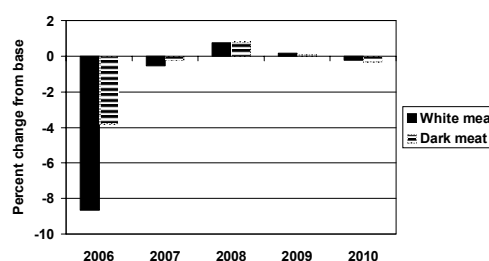
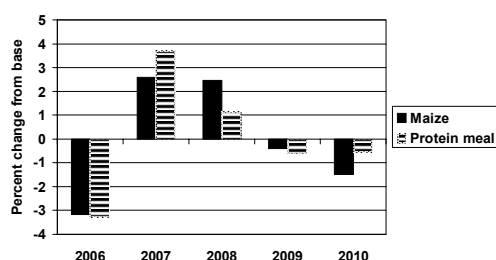


Figure S.3: World feed price impacts of 10% worldwide consumption shift away from all poultry in 2006



2) Impacts of an AI outbreak in the EU in 2006

Two basic scenarios of an outbreak of AI in the EU were examined, one with no consumption shift away from poultry and one with a negative consumption shift of 10%. The AI outbreak was assumed to limit exports of poultry meat for 6 months of the year. With no consumption shift, the reduction of exports onto world markets raises the world chicken price by almost 2 percent in 2006, but price effects beyond that year for chicken are short lived. Prices in Atlantic markets for beef and pork increase marginally in response to higher demand for them induced by higher poultry prices. EU poultry production drops quickly in response to lower prices to accommodate the full loss of the export markets, and domestic consumption increases in response to lower domestic prices.

Figure S.4: World meat price impacts of AI outbreak in EU in 2006 with no consumption shift away from poultry

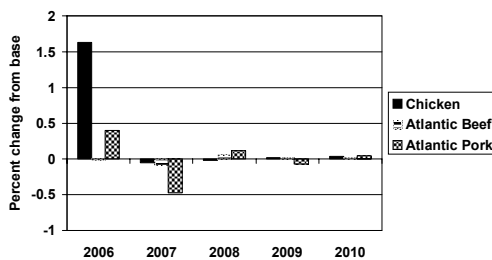
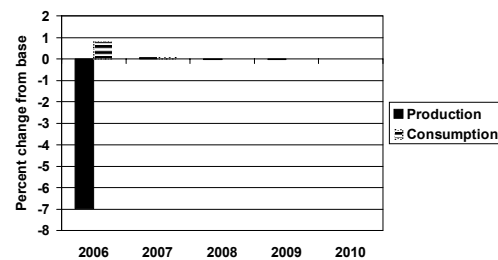


Figure S.5: Poultry impacts of AI outbreak in EU in 2006 with no consumption shift away from poultry



Assuming a 10% consumption shift away from poultry meat, larger impacts are felt on the domestic market, as well as on international markets, as higher EU demand for other meats generates higher prices of both beef and pork. In this scenario, the production effects are higher as demand declines more.

Figure S.6 World meat price impacts of AI outbreak in EU in 2006 with 10% consumption shift away from poultry

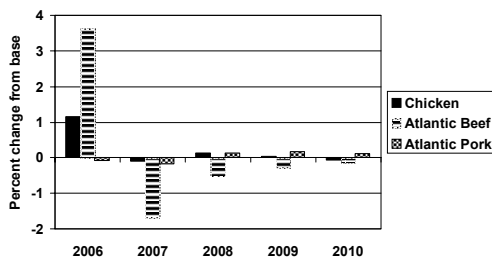
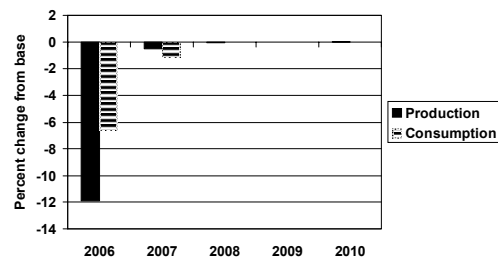


Figure S.7: Poultry impacts of AI outbreak in EU in 2006 with 10% consumption shift away from poultry



3) Impacts of hypothetical AI outbreak in Brazil and in the United States in 2006

Two comparative hypothetical scenarios were undertaken for Brazil and the United States, in which an AI outbreak assumes a loss of export markets for a period of 6 months. No consumption effects were explicitly accounted for in these scenarios. The analysis reveals differential impacts due to the higher export orientation of Brazil which exports both white and dark chicken meat. The USA exports mainly dark meat, but does not import white meat. The results show a larger aggregate impact on international poultry markets in the Brazil scenario, given Brazil's larger trade position, as well as a larger impact on Brazil's domestic production,

due to its larger export dependency. International beef and pork markets in which Brazil trades are also more affected given its dominant position in those markets. Prices for both beef and pork in the Atlantic market decline as significantly lower domestic poultry meat prices induce higher domestic poultry consumption but lower beef and pork consumption and hence higher exports, initially depressing international markets for these products in the first year. Subsequent year effects for beef and pork illustrate the biological lags that apply in these sectors.

Figure S.8: World meat price impacts of AI outbreak in Brazil in 2006

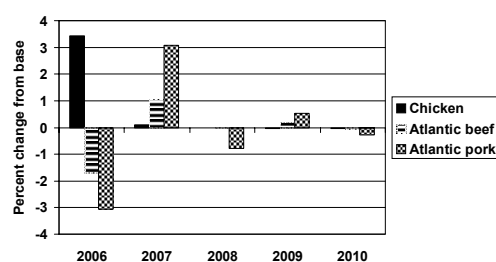
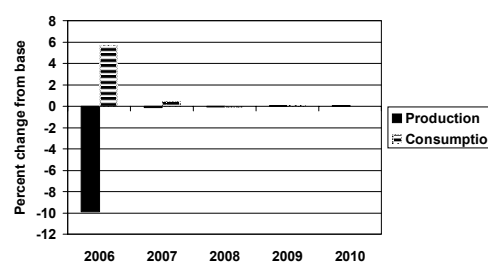


Figure S.9: Poultry impacts of AI outbreak in Brazil in 2006



For an AI outbreak in the United States, which exports only dark meat, the effects are less severe, as prices of chicken reflect the loss of export markets for this segment. Prices of white meat in the USA rise since, given production decline, the supply of white meat falls. Prices of beef and pork in Pacific markets decline initially in response to additional USA exports of these meats, then adjust over time as supplies respond according to biological lags.

Figure S.10: World meat price impacts of AI outbreak in USA in 2006

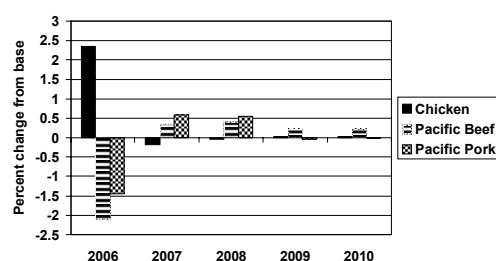
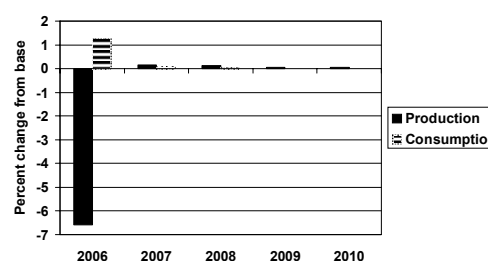


Figure S.11: Poultry impacts of AI outbreak in USA in 2006



4) The Impact of a Foot and Mouth Disease Outbreak in Brazil in 2006-07: the comparative impact of regionalization versus no regionalization.

Brazil's recent experience with Foot and Mouth Disease has shown the important mitigating effects of the recognition by importers of a regionalization approach to trade. Two scenarios illustrate the comparative impacts of regionalization versus no regionalization. One scenario assumes (FMD with regionalization) reduced beef exports for Brazil of 200 000 tonnes, and for pork of a 60% reduction from the base projection for 2006-07. In the second scenario (FMD with a no regionalization), all exports for beef and pork were eliminated for 2006-07. The results of these two scenarios show that given the significant external trade position of Brazil in the context of the Atlantic market, regionalization plays a significant role in containing the economic costs of an FMD outbreak. This is particularly true for beef where regionalization has worked more effectively than in the pig meat sector.

B. THE AGLINK-COSIMO MODEL USED FOR ANIMAL DISEASE SCENARIOS

1) What is it?

The *Cosimo* project at FAO has been undertaken jointly with OECD, that builds on OECD's work with its existing *Aglink* model. The joint model system, known as the *Aglink-Cosimo* model, unites various databases, economic modeling activities and expert judgments to enhance the analytical capacity to look at markets, policies and emerging issues.

Aglink-Cosimo is a partial-equilibrium world agricultural model, currently encompassing about 55 countries and regions and 18 commodities.

Commodities	Countries and Regions in AGLINK-COSIMO.		
	OECD-AGLINK	FAO-COSIMO.	
Wheat	Argentina	Algeria	Other South America
Coarse Grains	Australia	Asia Pacific - LDCs	Pakistan
Rice	Brazil	Asia Pacific - Other	Paraguay
Oilseeds	Canada	Central America - LDCs	Philippines
Roots and Tubers	China	Colombia	Saudi Arabia
Beef	EU-25	East Africa - LDCs	South Africa
Sheepmeat	Hungary	East Africa - Other	South Korea
Pigmeat	Japan	Egypt	Southern Africa - LDCs
Poultry	Mexico	India	Southern Africa - Other
Eggs	New Zealand	Indonesia	Thailand
Skim Milk Powder	Poland	Iran	Turkey
Whole Milk Powder	Russia	Malaysia	Ukraine
Cheese	United States	Nigeria	Uruguay
Butter		North Africa - Other	Vietnam
Fresh Dairy Products		Other Central America	West Africa - LDCs
Vegetable Oils		Other CIS	West Africa - Other
Oilseed Meals		Ghana	Tanzania
		Mozambique	Zambia
		Chile	

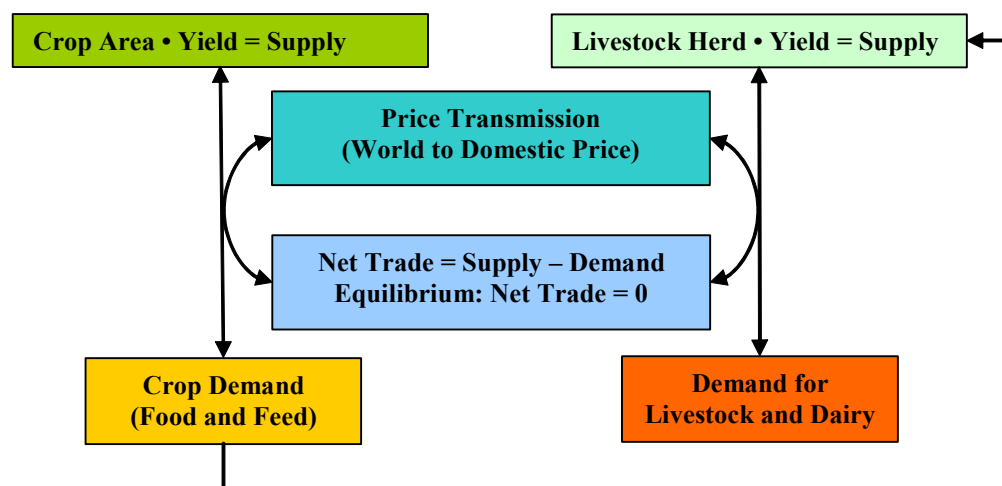
2) What can it do?

- Enhance understanding of the role of commodity markets and policies in agriculture and food security
- Support studies on the impact of policy reforms in agriculture and on food security
- Enrich discussions on domestic and trade policy reform
- Allow timely assessment of emerging issues to inform members
- Generate baseline projections for policy analysis

3) How does it work?

- Structured by country and region modules
- Country/region modules link to world markets depending on trade policies
- World markets clear excess balances to determine world prices
- Linked to in-house and external databases
- Driven by elasticities, technical and policy parameters. Projections driven by policy assumptions, and key drivers such as population and income growth, exchange rates, inflation, and technology trends.

4) Basic structure



5) Special model adjustments to undertake animal disease scenarios

World Poultry Market

For purposes of studying impact of Avian Influenza, a special version of the Aglink-Cosimo model was developed for which poultry has been divided into chicken and other poultry. Chicken meat has been separated into white and dark meat, reflecting the fact that different countries export or import these two in differing proportions. Production has been calculated using the assumption that 54% of a chicken carcass is white meat and the remainder is dark. Trade in chicken meat has been divided into white and dark meat using trade detailed data, and assumptions concerning the unit value of trade aligns with world white and dark meat prices, as indicated by Brazil's export prices. Given production and trade, consumption of white and dark meat has been calculated residually, and demand parameters chosen according to perceived substitution with other meats.

6) Other Model Uses

OECD-FAO Agricultural Outlook

The model is used to project annually world prices, production, utilization, stocks and trade of key agricultural commodities over a 10-year outlook period. The projection has been published since 2005 under this title, and data are now at www.agri-outlook.org.

Impact of OECD Agricultural Policies on Developing Countries: Exploring Alternative Degrees of Decoupling of Domestic Payments

The model was employed to study the various degrees of decoupling of domestic support payments in OECD countries and to assess their likely impact on developing countries. It was presented to the FAO Committee on Commodity Problems at its 65th Session in 2005.

For further information please contact:

Commodities and Trade Division, FAO, Rome

II. SUPPLEMENTARY FIGURES SUPPORTING DOCUMENT CCP: ME 06/3 “IMPORT SURGES OF DAIRY AND POULTRY PRODUCTS: LESSONS LEARNED”

Table S.1 - Import Surge Injury: Poultry Industry

Country	Evidence of Surge/Policy Response	Injury Indicators
Ghana	Poultry imports grew from 4,000 tonnes in 1998 to 124,000 in 2004. Trigger volumes exceeded in 2004 ¹	Poultry enterprises operating at low capacities (sometimes less 25%), capacity utilization only 25% for hatcheries, 42% for feed mills, 25% for processing plants. Stagnant production.
Cameroon	Between 1999 and 2004, imports increased by almost 300 percent. Government set quota of 5,000 tonnes in late 2005	Reports of loss of rural jobs lost, lower domestic production, declining retail poultry prices (down between 16 and 37% over the period).
Cote d'Ivoire	Imports expanded 6 folds between 1998-2004. In 2005, imports declined significantly following the Gov 1000 Fcfa/Kg import tax.	Production decreased by 7% in 2002 and by 49% in 2004, in comparison to 2001.
Jamaica	Two surges in the 1990s, 1991-1993 and 1996-1999; measures taken to reduce illegal imports/under-invoicing, tariffs increased to 180% in 2001.	50 percent of small farmers dropped out of the business over the past decade.
Senegal	Imports increase from 1 percent of consumption in 2000 to over 20% by 2002	Producers leaving industry or converting operations to laying hen production. Declining retail prices in urban areas, 70 percent of grow-out operations reported to have closed.
Tanzania ²	Imports rise 81 fold between 1997 and 2002.	Reports of lower capacity utilization and employment losses in the industry.

¹ Trigger levels, using 30 percent deviation from three year averages, were calculated.

² Reference FAO Commodity and Trade Policy Research Working Paper, No. 11, The impact of import surges: country case study results for Senegal and Tanzania, January 2005.

Table S.2 – Import Surge Injury: Dairy Industries

Country	Evidence of Surge	Injury Indicators
Malawi	Between 1980 and 2003, imports exceeded trigger levels in 5 cases ⁷ .	Stakeholder interviewed indicated that most dairy processors operate below capacity; unable to satisfy domestic demand
Kenya	Between 1995 and 2004, dry milk powder imports exceeded trigger levels in 1995, 1998, 1999 and 2000 ⁷ .	Contributed to depressed producer prices for locally produced raw milk between 1985 and 2002 in a context of rising consumer prices for processed dairy products
Tanzania	Between 1997 and 2004, imports of dairy products doubled from 3,459 tonnes to 7,111 tonnes; government raised and then lowered tariffs; set up a task force.	Imported milk powder as a share of marketed dairy products rises from 20 in 2003 to 40% in 2004.
Jamaica	Imports increased gradually over a number of years. No peaks easily identified.	Domestic production of dairy collapsed in the last 15 years and replaced by imports. Stakeholders claim that as much as 50 per cent of dairy farmers sold their animals and went out of business as a result of the post-liberalization import surge in 1992, and surveys indicate a 2/3 reduction in employment on dairy farms
Sri Lanka	Over past 23 years milk powder imports exceed the trigger ⁷ twelve times.	Imports as a share of consumption increases from 20 to 70% with stagnant domestic production.

III. SUPPLEMENTARY FIGURES SUPPORTING DOCUMENT CCP: ME 06/4 “FOLLOW-UP TO THE GUIDELINES FOR INTERNATIONAL COOPERATION IN THE LIVESTOCK AND MEAT SECTOR”

Table S.3 – European Agricultural Guidance and Guarantee Fund (EAGGF), Expenditure on Livestock and Meat

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 3/
						MILLION	EUR									
TOTAL MEAT																
Export refunds	6,658	6,741	6,649	6,095	6,610	8,730	8,650	7,010	6,892	6,702	7,623	7,725	10,330	9,403	10,117	525
Intervention 1/	1,614	1,622	2,155	2,181	2,051	1,787	1,642	926	963	996	470	485	407	378	311	337
Direct premium	2,368	2,202	1,394	-50	-190	645	1,155	308	17	11	551	435	309	247	238	188
	2,676	2,917	3,100	3,964	4,749	6,298	5,853	5,776	5,912	5,695	6,602	6,805	9,614	8,778	9,568	
BOVINE MEAT																
Export refunds	4,307	4,427	3,989	3,532	4,091	6,796	6,675	5,160	4,578	4,539	6,054	7,072	8,091	7,776	8,176	388
Intervention 1/	1,282	1,332	1,711	1,708	1,761	1,559	1,499	774	595	661	363	387	296	251	212	200
Of which: Private and Public storage	3,025	3,095	2,278	1,824	2,330	5,237	5,176	4,386	3,983	3,878	5,691	6,685	7,795	7,525	7,964	188
	2,312	2,191	1,383	-209	-215	620	749	145	-37	-83	326	104	3	-8	0	
Suckler cow premium	370	449	570	955	1,126	1,632	1,522	1,653	1,658	1,628	1,777	1,959	2,226	2,092	2,228	- 4/
Special Bovine premium	335	454	319	657	957	1,407	1,238	1,341	1,297	1,299	1,530	1,748	1,946	1,929	2,122	- 4/
Extensification premium				389	438	507	569	706	714	715	914	943	989	1,075	1,111	- 4/
Slaughter premium											494	1,025	1,719	1,727	1,783	- 4/
Other incl National envelope 2/	8	1	6	32	24	1,071	1,098	541	351	319	438	576	723	484	486	-
Purchase for destruction											201	77	82	14	3	
Special purchase scheme											11	253	107	214	231	188
OVINE MEAT																
Private storage	1,966	2,013	2,209	1,933	2,204	1,682	1,425	1,534	1,894	1,736	1,447	552	2,082	1,469	1,837	0
Ewe and goat premium	3	4	2	2		2		3	3	4	0	0	0	0	0	
LFA premium	1,787	1,747	1,796	1,628	1,781	1,321	1,067	1,171	1,536	1,365	1,095	417	1,569	1,146	1,440	- 4/
Other 2/	176	266	409	303	423	360	359	364	356	369	354	137	442	326	398	- 4/
						-1	-1	-1	-1	-2	-2	-2	71	-2		
PIG MEAT																
Export refunds	252	141	201	416	143	125	479	239	327	354	70	30	63	72	23	46
Private storage	199	130	194	259	118	101	72	75	275	262	55	27	17	42	19	46
Exceptional market support	17	11	2	22	18	18		46	46	92	5	3	35	30	4	
	36	5	5	135	7	6	407	164	6		10	0	11			
POULTRY MEAT																
Export refunds	133	160	250	214	172	127	71	77	93	73	52	71	94	85	80	91
	133	160	250	214	172	127	71	77	93	73	52	71	94	85	80	91

1/ All expenditure other than export refunds, for the beef sector the official system of intervention stocks was eliminated in 2002. Includes also market BSE measures,

2/ national envelope included from 2001 for bovine meat and from 2003 for ovine meat

3/ Budget 2006 as adopted December 2005

4/ included in the SPS/direct aids

SOURCE: European Commission