ANNEX I

EXISTING COMMUNITY LEGISLATION REGARDING DIOXINS AND PCBs

Waste incineration

– Council Directive 89/429/EEC of 21 June 1989 on the reduction of air pollution from existing municipal waste incineration plants

– Council Directive 89/369/EEC of 8 June 1989 on the prevention of air pollution from new municipal waste incineration plants

– Council Directive 94/67/EC of 16 December 1994 on the incineration of hazardous waste.

– Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste

Waste

– Council Directive 75/442/EEC of 15 July 1975 on waste

– Council Directive 91/689/EEC of 12 December 1991 on hazardous waste

– Council Regulation (EEC) No 259/93 on the supervision and control of shipments of waste within, into and out of the European Community

– Council Directive 99/31/EC of 26 April 1999 on the landfill of waste

– Council Directive 75/439/EEC of 16 June 1975 on the disposal of waste oils

Integrated Pollution Prevention and Control

– Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control

– Commission Decision 2000/479/EC of 17 July 2000 on the implementation of a European pollutant emission register (EPER) according to Article 15 of Council Directive 96/61/EC.

Water

– Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances

– Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community

– Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy

Restricions on marketing and use of chemicals

- Council Directive 85/467/EEC of 1 October 1985 amending for the sixth time (PCBs/PCTs) Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations

- Council Directive 91/173/EEC of 31 March 1991 amending for the ninth time Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations

Other PCB legislation

- Council Directive 76/403/EEC of 6 April 1976 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (banning the use of PCBs in open applications such as printing inks and adhesives)

- Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT)

Major Accident Hazards

- Council Directive 82/501/EEC of 24 June 1982 on the major-accident hazards of certain industrial activities

- Council Directive 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances

Animal Nutrition

- Council Directive 1999/29/EC of 22 April 1999 on the undesirable substances and products in animal nutrition

- Commission Regulation (EC) No 2439/1999 of 17 November 1999 on the conditions for the authorisation of additives belonging to the group “binders, anti-caking agents and coagulants” in feedingstuffs, as amended by Commission Regulation (EC) No 739/2000 of 7 April 2000.

ANNEX II

DIOXIN/PCB STUDIES FINANCED BY THE COMMISSION

- « The European Dioxin Inventory : Identification of Relevant Industrial Sources of Dioxins and Furans in Europe », by North Rhine-Westphalia State Environment Agency, 1997

- "The European Dioxin Emission Inventory - Stage II", by LUA-NRW, January 2001

- « Releases of Dioxins and Furans to Land and Water in Europe », by AEA Technology, September 1999

- « Compilation of EU Dioxin Exposure and Health Data », by AEA Technology, England, October 1999

- « Evaluation of occurrence of PCDD/PCDF and POPs in wastes and their potential to enter the food chain », by the University of Bayreuth at the Department of Prof. Hutzinger, September 2000

- "Exploration of possible future POP control areas", AEA Technology Environment, September 2000

- "Dioxins and other POPs in wastes and their potential to enter the foodchain - stage II",

- « PCDD/Fs, PCBs, PBBs and PBDD/Fs : environmental pathways for human exposure », by Arbeitsgemeinschaft Dioxin Projekt

- "Environmental cycling of selected persistent organic pollutants in the Baltic region (POPCYCLING-BALTIC)"

- "Gobal mass balance of persistent semi-volatile organic compounds : an approach with PCB as an indicator (GLOBAL-SOC)"

- "Measuring and modelling the dynamic response of remote mountain lake ecosystems to environmental change : a programme of mountain lake research (MOLAR)"

EXPOSURE AND RISK ASSESSMENTS PERFORMED BY THE COMMISSION

- "Assessment of dietary intake of dioxins and related PCBs by the population of EU Member States », Scientific Co-operation on questions relating to Food – Task 3.2.5. – 7 June 2000

- "Dioxin contamination of feedingstuffs and their contribution to the contamination of food of animal origin", Opinion of the Scientific Committee on Animal Nutrition adopted on 6 November 2000

- "Risk assessment of Dioxins and Dioxin-like PCBs in Food", Opinion of the Scientific Committee for Food (SCF) adopted on 22 November 2000

- Update of the “Risk Assessment of Dioxins and Dioxin-like PCBs in Food “ based on new information available since the adoption of the SCF opinion of 22nd November 2000; Opinion of the Scientific Committee for Food adopted on 30 May 2001

- "Risks of environmental dioxins: Linking epidemiology with toxicity studies to strengthen accurate risk assessment", February 2000

ANNEX III

RESEARCH PRIORITIES
Dioxins and PCBs

H = high priority

m = medium priority

1. Environmental Fate and Transport	
Atmospheric environment	
• Vapour/particle partitioning of individual PCDD/F congeners	***m***
• Particle size distribution data for PCDD/Fs associated with particles	***m***
• Measurements of wet and dry deposition	***H***
• Modelling studies of PCDD/F behaviour in the atmospheric environment	***H***
• Long range transport (over Europe)	***H***
Terrestrial environment	
• Define the rates of transport and degradation in soils	***m***
• The significance of root uptake especially the interspecies variability	***H***
• PCDD/Fs transferred to plant via soil splash and animal trampling	***m***
• Assessment of air to soil transfer and of the various deposition mechanisms to vegetation (wet, dry particle, and dry gaseous)	***H***
• Fate and transport of PCBs and PCDD/Fs in landfills	***H***
• Studies on the levels of PCDD/Fs associated with burning PCP treated wood	***H***
• Studies on the levels and sources of PCDD/Fs in composted material and the environmental fate of the PCDD/Fs in the composted material and in sewage sludge	***H***
• Modelling studies of PCDD/F behaviour in the terrestrial environment	***H***
• Appropriate plants to be used as bio-accumulators of PCBs and PCDD/Fs	***H***
• More measurements of background concentrations of PCBs and PCDD/Fs in vegetation and animal tissue and definition of reference values	***H***

Aquatic environment *: general research has been very extensive, therefore it is proposed to focus on more specific gaps*	
• Quantify input of PCDD/Fs from soil runoff at catchment level	***m***
• Further information about the stability of PCBs and PCDD/Fs in sediments under different redox environments especially if the toxicity of the PCBs and PCDD/F mixture increases through degradation	***m***
• Development of standardised sampling strategies for determining representative PCDD/F concentrations in fish and sediments	***H***
• Partitioning of PCDD/Fs between the particulate and dissolved organic phases in the water column; apply experimental work to field situations	***m***
• Availability of organic carbon-associated PCDD/Fs in sediments for aquatic ecosystem	***H***
• Modelling studies of PCB and PCDD/F bio-accumulation/bio-magnification in the aquatic environment and the food chain	***H***
• Degradation of PCBs into metabolites in water and sedimentsl	***H***
2. Ecotoxicology and Human Health	
• Estimates of human exposure to dioxin and PCBs through ingestion, inhalation, skin contact	***H***
• the effects of chronic or periodic exposure to PCBs (and metabolites) and to dioxins	***H***
• identification of particular vulnerable species as bio-indicator for the monitoring and protection of "at risk" habitats or sites	***H***
• elaboration of a methodology to set limit values for lower effect levels in fauna	***H***
• upgrading knowledge on bio-accumulation factors in the trophic chain	***H***
• Establish a Toxic Equivalent Factor for non-coplanar PCB congeners with thyroid interaction or neurotoxicity.	***H***
• significance of climate, agricultural practices and dietary regimes to PCB and dioxin exposure in Southern Member States of the EU, which differ from those of the Northern Member States	***H***
• Epidemiological studies, including target groups like foetus, infants, etc …	***H***
• Identification of biomarkers of health effects in humans and animals	***m***

3. Agrofood industry	
• Studies on the carry-over and establishing pertinent transfer factors for the different PCBs and PCDD/F from soil, sediment and feedingstuffs to animals tissues, including fish (e.g meat, fat) and products (e.g milk and eggs). Particular attention needs to be paid to the dioxin-like PCBs :	***H***
– Determination of transfer factors for PCDD/F from soil and feedingstuffs to animal tissues and products for cattle (ruminants)	***m***
– Determination of transfer factors for dioxin-like PCBs from soil and feedingstuffs to animal tissue and products (milk) for cattle (ruminants)	***H***
– Determination of transfer factors for PCDD/F and PCBs (in particular dioxin-like PCBs) from soil and feedingstuffs to animal tissues and products (eggs) for poultry	***H***
– Determination of transfer factors for PCDD/F and PCBs (in particular dioxin-like PCBs) from feedingstuffs to animal tissues and products for pigs	***H***
– Determination of transfer factors for PCDD/F and PCBs (in particular dioxin-like PCBs) from sediment and feedingstuffs for fish	***H***
• A characteristic profile of dioxin like compounds congener in beef	***m***
• Assessment of agricultural or industrial practices (such as hot air feedstuff drying, use of chemical substances like solvents, pelleting aids etc…for the production of feedingstuffs, fermentation, …) for their potential to produce PCDD/Fs	***H***
• Quantification of potential PCB and PCDD/F input into animal feedstuff via recyclates such as used eadible oils & fats, slaughterhouse wastes etc…	***H***
• PCDD/F in manure	***m***
4. Source inventories	
• Source data on PCBs	***H***
• Contribution of waste and recycling of waste (including processes) to total emissions into environment /foodchain	***H***
• Contribution of products to total emission into the environment (eg cosmetics, pesticides, textiles, plastics, paper, …)	***H***
• Domestic incineration of wood and coal combustion (domestic + industrial)	***H***

• Reservoir sources (behaviour, degradation processes, decontamination methods,..)	***H***
• Natural sources of dioxins and their share in the overall release into the environment	***m***
• New sources of PCBs as by-products of chemical industry	***m***
• Dioxin from accidental and incidental fires (buildings, vehicles, waste, etc..)….	***m***
5. Analytical Aspects	
• Investigation on cheaper,faster and reliable analytical alternatives and their limitations	***H***
• A standard approach to interpreting data sets containing values below the Limit of Detection (LOD)	***m***
• Inter-calibration of dioxin laboratories in order to ensure consistent results across Europe	***H***
• guidelines/standards for sampling, data generation and reporting	***H***
6. Decontamination measures	
• Decontamination methods for products (mothermilk, fish oil, …)	***H***
• Decontamination methods for soils and sediments	***H***
7. Monitoring	
• Development of a Geographical Information System (GIS) integrated in the global environment GIS strategies	***H***