

## Overview of APAEs and the Green Growth Agreement

An Action Plan for the Aquatic Environment was put in place in 1987, preceding the Nitrates Directive (91/676/EEC). However as a result of the evaluation of the APAE I, the Danish Parliament agreed upon Action Plan on the Aquatic Environment II (Action Plan II) and hereby fulfilling the Nitrates Directive (91/676/EEC). Action Plan II focused especially on root zone nitrogen discharges from arable land. Below is an overview of the main Action Plans and further initiatives taken to strengthen their implementation.

Date of first publication/ revision	Sub-components of the Action Programme	Principal measures taken under the APAE
1985	NPO Action Plan to reduce N- and P-pollution	<ul style="list-style-type: none"> <li>• Target: general reduction of N and P</li> <li>• Minimum 6 month slurry storage capacity</li> <li>• Max. livestock density 2 LU/ha</li> <li>• Various measures to reduce runoff from silage clamps and manure heaps</li> <li>• Mandatory to establish a floating antural crust or artificial cover on slurry tanks</li> <li>• Ban on slurry spreading between harvest and 15 October on soil destined for spring crops</li> </ul>
1987	Action Plan on the Aquatic Environment I (Action Plan I)	<ul style="list-style-type: none"> <li>• Target: 49 % reduction of nitrogen leaching compared to the mid 1980s</li> <li>• Minimum 9 months slurry storage capacity</li> <li>• Ban on slurry spreading from harvest to November 1 on soil destined for spring crops</li> <li>• Mandatory to incorporate manure within 12 hours after application</li> <li>• Winter green fields required (percentage increasing from 45% to 65% through the period)</li> <li>• Mandatory fertiliser and crop rotation plans</li> </ul>
1991 1994 1996	Action Plan for Sustainable Agriculture (implemented to strengthen APAE I) 10-Point Programme for Protection of the Groundwater and Drinking Water Follow-up on the Action Plan for Sustainable Agriculture	<ul style="list-style-type: none"> <li>• Target: 49 % reduction of nitrogen leaching compared to the mid 1980s</li> <li>• Ban on slurry spreading from harvest to February 1st, except grass and winter rape</li> <li>• Compulsory fertiliser and manure accounts</li> <li>• Statutory utilisation rates for nitrogen in manure (pig slurry: 60 %, cattle slurry: 55 %, deep litter: 25 %, oother types 50 %)</li> <li>• Winter green fields required (percentage increasing from 45% to 65% through the period)</li> <li>• Maximum limit on the plant-available nitrogen applied to different crops, equal to economic optimum.</li> </ul>
1998	Action Plan on the Aquatic Environment II (Action Plan II)	<ul style="list-style-type: none"> <li>• Target: 49% reduction of N-leaching compared to the mid 1980s</li> <li>• Mandatory catch crops (6% and 10% of the total area of the farm property depending on the amount of manure used per hectare). Catch crops included in fertiliser plan.</li> <li>• Nitrogen standards norms with maximum limit on the plant-available nitrogen applied to different crops lowered to 10 % beneath economic optimal application rate.</li> <li>• Livestock density demands at 1,7 LU/ha for cattle and 1,4 LU/ha for pigs</li> </ul>

2001	Midterm evaluation of Action Plan on the Aquatic Environment II	<ul style="list-style-type: none"> <li>Increased utilisation rates for manure through the period from APAE I to final rate in 2002 (pig slurry: 60 to 75 %, cattle slurry: 55 to 70 %, deep litter: 25 to 45 %, other types 50 to 65 %)</li> <li>Improved animal feeding practice to improve utilization of feed</li> <li>Tax on DKK 5 per kg nitrogen in fertiliser (farms are exempted if they register in the manure register – compulsory for most farms, but not possible for nonfarm nitrogen fertiliser users)</li> <li>Reduced nitrogen standards for grassland and restrictions on additional N-application to bread wheat (2000)</li> <li>Ban on slurry application by broadcaster spreader (2001)</li> <li>Mandatory covering of all dung heaps</li> <li>Slurry spread on bare soil must be incorporated within 6 hours (2001)</li> <li>Optimisation of manure handling in animal housing</li> <li>Ban on ammonia treatment of straw</li> <li>Subsidies for: <ul style="list-style-type: none"> <li>Forestation, conversion to organic farming, reduced nitrogen use in vulnerable areas, and establishment of wetlands</li> </ul> </li> </ul>
2001	Action Plan for reducing Ammonia Volatilization from Agriculture	
2003	Final evaluation of Action Plan on the Aquatic Environment II	
2004	Action Plan on the Aquatic Environment III	<ul style="list-style-type: none"> <li>Target: 13 % reduction of nitrogen leaching in 2015 compared to 2003 and 50 % reduction of phosphorous surplus in Danish agriculture by 2010.</li> <li>Mandatory catch crops increased to 10 and 14 %</li> <li>50.000 ha 10 m. buffer zones along water courses and lakes before 2015</li> <li>Improvement of utilisation of nitrogen and phosphorous in feed. For phosphorous encouraged by a tax on mineral phosphorous added to feed.</li> <li>Based on research result further increase in utilisation rates for manure</li> <li>300 m. protection zones around ammonia sensitive habitats</li> <li>Strengthen and increase organic farming</li> <li>Establish more wetland and support environmentally sensitive farming.</li> </ul>
2008	Midterm evaluation of the Action Plan on the Aquatic Environment III will consider further initiatives needed.	
2009	Green Growth Agreement	<ul style="list-style-type: none"> <li>19,000 tonne reduction in nitrogen discharge to the aquatic environment from 2010 to 2015</li> <li>210 tonne reduction in discharge of phosphor to the aquatic environment from 2010 to 2015.</li> <li>Permanent 10 m spraying-free, fertiliser-free and cultivation-free buffer zones</li> <li>neutralisation of nitrogen effect when agricultural land is taken out of production</li> <li>ban on ploughing grass fields at certain periods of the year</li> <li>ban on certain forms of soil cultivation in the autumn</li> <li>tightened regulation on existing APAE-catch crops and targeted use of catch crops</li> <li>Wetlands and flooding of river valleys</li> </ul>